THE LANCET.

No. 4743. Vol. CLXXXVII. LONDON, SATURDAY, JULY 25, 1914. Pp. 152.

CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

A LECTURE on Localisation of Motor and Speech Centres in Definite Areas of the Cortex of the Brain. Delivered in the Physiological Laboratory of the University of London on June 8th, 1914, by EUGENE DUPUY, M.D. Paris, &c..... 207

ORIGINAL ARTICLES.

A Reduction in the Virulence of Tubercle Bacilli Stored in Normal Saline. By LEONARD S. DUDGEON, F.R.C.P.Lond. (From the Department of Pathology, St. Thomas's Hospital)..... 210

Observations on 120 Cases of Lead Absorption from Drinking-Water. By W. W. STAINTHORPE, M.D., B.S. Durh..... 213

Further Note on the Use of Celluloid Splints in the Treatment of Acute Cases of Poliomyelitis. By FREDERICK E. BATTEN, M.D. Cantab., F.R.C.P. Lond., Physician to the Hospital for Sick Children, Great Ormond-street, and to the National Hospital for the Paralysed and Epileptic.—(*Illustrated*).. 216

Epidemic Catarrhal Jaundice. By E. A. COCKAYNE, M.D. Oxon., M.R.C.P. Lond., Assistant Physician to the Middlesex Hospital; Physician to Out-patients, Victoria Hospital for Children, Chelsea..... 218

Some Problems in Cardiac Physiology: Contributions to a Study of the Relations which Exist between the Various Chambers of the Mammalian Heart. By A. F. STANLEY KENT, M.A.Oxon., Henry Overton Wills Professor of Physiology in the University of Bristol..... 220

A Case of Tuberculous Disease of Vertebræ Complicated by an Extensive Acute Suppurative Meningitis. By JAMES MILLER, M.D.Edin., F.R.C.P. Edin., Lecturer on Pathology and Bacteriology at the School of Medicine of the Royal Colleges, Edinburgh; and A. FERGUS HEWAT, M.B., Ch.B. Edin., M.R.C.P. Edin., Tutor in Clinical Medicine, University of Edinburgh; Lecturer, Edinburgh Post-Graduate Vacation Course.—(*Illustrated*)..... 222

The Surgical Treatment of Streptococcic Arthritis. By JOHN O'CONOR, M.A., M.D. T.C.D., Senior Medical Officer to the British Hospital, Buenos Aires..... 224

The Technique of Abderhalden's Serum Reaction. By W. E. BULLOCK, M.D.Edin., B.Sc. Lond., Assistant, Imperial Cancer Research Fund.—(*Illustrated*)..... 225

The Geographical Distribution of Appendicitis. By R. W. MURRAY, F.R.C.S. Eng., late Honorary Surgeon, David Lewis Northern Hospital, Liverpool..... 227

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

The Causation of Stricture following Suprapubic Prostatectomy. By H. W. MILLS, M.R.C.S. Eng., L.R.C.P. Lond..... 230

The Use of Liquid Paraffin in Enteric Fever with Constipation. By LLEWELLYN P. PHILLIPS, M.A., M.D. Cantab., F.R.C.P. Lond., F.R.C.S. Eng., Professor of Medicine in the Egyptian Government Medical School, and Senior Physician to Kasr-el-Aini Hospital, Cairo.. 231

REVIEWS AND NOTICES OF BOOKS.

Tropical Diseases: a Manual of the Diseases of Warm Climates. By Sir Patrick Manson, G.C.M.G., M.D., LL.D. Fifth edition..... 231

Principles of Surgery. By W. A. Bryan, A.M., M.D..... 232

Immunity: Methods of Diagnosis and Therapy and their Practical Application. By Dr. Julius Citron. Second edition..... 232

A Text-book of Medical Entomology. By Captain W. S. Patton, I.M.S., and Captain F. W. Cragg, I.M.S..... 233

A Text-book of General Embryology. By William E. Kellicott..... 233

The Treatment of Diseases of the Digestive System. By Robert Saundby, M.D.Edin. Second edition..... 234

Diseases of the Rectum and Pelvic Colon. By Martin L. Bodkin, M.D. New York..... 234

Sanitation in India. By J. A. Turner, M.D., D.P.H..... 234

The Fundamental Basis of Nutrition. By Graham Lusk 235

The Purpose of Education: an Examination of the Education Problem in the Light of Recent Psychological Research. By St. George Lane Fox Pitt..... 235

Diabetes: its Nature and Treatment. What Diabetics Ought to Know. By the Hon. T. M. Nair, M.D..... 235

Nouveau Traité de Chirurgie. Publié sous la direction de A. Le Dentu et Pierre Delbet. Maladies de la Mamelle. Par Amédée Baumgartner..... 236

Miscellaneous Volumes..... 236

The Journal of Physiology. Vol. XLVIII..... 237

NEW INVENTIONS.

A Cold Air Labyrinth Testing Apparatus.—(*Illustrated*)..... 240

LEADING ARTICLES.

A WEEK OF CONGRESSES..... 241

THE REPORT OF THE CHIEF INSPECTOR OF FACTORIES..... 242

ANNOTATIONS.

The Mexican Situation from a Medical Standpoint..... 243

Claret as a Beverage..... 243

A New Test for Morphine..... 244

Mercyism..... 244

Mr. H. G. Wells on Medical Bibliography..... 245

Umbilical Sinus due to a Pin in the Appendix..... 245

Temperatures in School Children..... 246

The Simulation of Aneurysm by Other Aortic and Cardiac Diseases..... 246

Epidemic Alopecia Areata..... 247

The British Pharmaceutical Conference..... 247

VITAL STATISTICS:

Health of English Towns..... 254

Health of Scotch Towns..... 254

Health of Irish Towns..... 254

Analysis of Sickness and Mortality Statistics in London during June, 1914..... 255

Vital Statistics of London during June, 1914..... 256

SPECIAL ARTICLES.

The Prevention of Insanity..... 238

British Pharmaceutical Conference: Fifty-first Annual Meeting..... 239

Imperial Cancer Research Fund..... 248

Medicine and the Law..... 250

Medico-Psychological Association of Great Britain and Ireland..... 251

Royal Commission on Venereal Diseases..... 252

June at Home and Abroad..... 253

The Services..... 256

Annual Meeting of the American Medical Association..... 258

Two Distinguished Physiologists..... 270

HOME AND FOREIGN NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Manchester..... 259

Birmingham..... 259

Scotland..... 259

Ireland..... 260

Paris..... 261

India..... 261

OBITUARY.

The Right Hon. Sir Christopher Nixon, Bart., P.C., D.L., LL.D., M.D. Dub., F.R.C.P. Irel., Vice-Chancellor of the National University of Ireland; Past-President of the Royal College of Physicians of Ireland.—(*With Portrait*).. 269

THE NATIONAL INSURANCE ACT.

The Working of the Act..... 271

Mr. Masterman and the Pharmaceutical Society..... 271

The Sanitary Congress and National Insurance..... 272

The Life Assurance Medical Officers' Association and the Act..... 272

Blackburn Insurance Committee..... 272

Dundee Insurance Committee: Privacy in Cases of Complaints..... 272

CORRESPONDENCE.

Oral Sepsis and the Extraction of Teeth (Sir James F. Goodhart, Bart.)..... 262

The Technique of Artificial Pneumothorax (Dr. Wm. Parry Morgan, Dr. Claude Lillingston)..... 263

Nurses' Registration (Lord Knutsford)..... 264

Carbolic Acid Injections in Tetanus (Mr. Sherali K. Nanjiani, Dr. Clifford Mayer) 265

Tuberculin "Enthusiasts" (Dr. Charles Miller)..... 266

Who Is It? (Mr. J. Y. W. MacAlister).—(*Illustrated*)... 266

Deferred Death after Tracheotomy for Laryngeal Diphtheria (Dr. John Biernacki)... 267

The School Medical Service (Mr. John Priestley)..... 267

The Working of the National Insurance Act in Great Yarmouth (Dr. T. Cuming Askin)..... 267

The Position of the Assistant Medical Officers of the Metropolitan Asylums Board (Dr. John H. Trench)..... 267

Child Mortality and Alcoholism in Paris (Dr. Thomas Dutton) 267

Glycosuria and the Sugar Industry (Dr. G. Duncan Whyte)..... 277

A Disclaimer (Dr. R. Fortescue Fox)..... 278

MEDICAL NEWS.

London Hospital..... 215

Society for Relief of Widows and Orphans of Medical Men 231

The New East Sussex Hospital at Hastings..... 238

Radcliffe Infirmary, Oxford: Complimentary Dinner to Dr. Horatio P. Symonds..... 240

Central London Throat and Ear Hospital and the Clinical Congress of Surgeons..... 258

University of Cambridge: Degrees conferred..... 268

University of Bristol: Pass-list 268

University College, London..... 268

University of Liverpool..... 268

Victoria University of Manchester..... 268

Irish Medical Schools' and Graduates' Association..... 268

University of London..... 268

Bristol General Hospital..... 268

Medical Magistrates..... 268

Glasgow Royal Infirmary: Post-Graduate Classes..... 268

British Science Guild..... 268

St. George's Hospital..... 268

Donations and Bequests..... 268

South-West London Medical Society..... 268

Medical Sickness and Accident Society..... 268

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics..... 272

House of Commons..... 273

Books, &c., received..... 274

Appointments..... 275

Vacancies..... 275

Births, Marriages, and Deaths 276

Notes, Short Comments, and Answers to Correspondents... 277

Medical Diary..... 278

Meteorological Readings..... 279

Acknowledgment of Communications received..... 280

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

APPLETON & CO.:— PAGE
Behan..... Pain 5
Crile ..... Anæmia and Resuscitation 5
Kelly & Burnam.. Diseases of Kidneys, &c. 5
Rosenau .. Preventive Medicine and Hygiene..... 5
Stockton .. Diseases of Stomach. 5
Thompson . Occupational Diseases 5

BAILLIERE, TINDALL & COX:—
Bigg..... Indigestion, &c..... 6
Blumfeld .. Anæsthetics .. Cover 1
Calot's Indispensable Orthopedics ..... Cover 1
Clarke, E. .. Errors of Accommodation, &c. .. Cover 1

BALE, SONS & DANIELSSON:—
Moullin .... When to Operate in Inflammation of the Appendix.... Cover 1

CASSELL & CO.:—
Morris, Sir M..... Diseases of the Skin 6

CHURCHILL, J. & A.:—
Berry & Legg .... Hare Lip and Cleft Palate 7
Bowlby, Sir A. A., & Andrewes Surgical Pathology, &c. 7
Box ..... Post-Mortem Manual 7

CHURCHILL—(Continued). PAGE
Box & Eccles' Clinical Applied Anatomy..... 7
Citron..... Immunity 7
Clouston .. Mental Diseases 7
Coles ..... The Blood 7
" ..... Clinical Diagnostic Bacteriology 7
Cushny .... Pharmacology, &c. .. 7
Eden ..... Midwifery 7
" ..... Gynæcology 7
Fenwick .. Urinary Tuberculosis Cover 1
Haig ..... Uric Acid in the Clinic 7
" ..... Uric Acid as a Factor, &c. 7
" ..... Uric Acid: an Epitome 7
" ..... Diet and Food..... 7
Hopewell-Smith .... An Introduction to Dental Anatomy .. 7
St. Thomas's Hospital Reports .. 7
Thorne, Besly .... Schott Nauheim Treatment of Heart 8
Wrench .... Healthy Marriage.... 7

FROWDE AND HODDER & STOUGHTON:—
Jamieson .. The Care of the Skin in Health..... Cover 1
McCann .. Cancer of the Womb, &c. ..... Cover 1
Waring .... Surgical Diseases of Gall Bladder, &c. 8
" .... Operative Surgery .. 8

LEWIS:— PAGE
Binnie..... Operative Surgery .. 40
Buxton .... Anæsthetics 40
Greeff ..... External Diseases of the Eye 40
H. K. Lewis's Publications. Cover 1
Krause .... Surgery of Brain, &c.. 40
Lowers .... The Diseases of Women 40
Moullin .... Enlargement of the Prostate .... Cover 1
" .... The Biology of Tumours .... Cover 1
Paget ..... For & Against Experiments on Animals.. 40
Swietochowski,..... Mechano-Therapeutics, &c. 40
Tilley ..... Diseases of the Nose and Throat 40
West & Scott .... Operations of Aural Surgery 40

LONGMANS, GREEN & CO.:—
Hare ..... Food Factor in Disease ..... Cover 1

MACMILLAN & CO.:—
Ballance .. Cerebral Decompression in Ordinary Practice 6
Lockwood.. Appendicitis 6

MEDICAL PUBLISHING CO.:—
Lane, Sir W. A.. Operative Treatment of Fractures. Cover 1
" Cleft Palate and Hare Lip ..... Cover 1

NISBET & CO.:— PAGE
Lane, Sir W. A.. Treatment of Chronic Constipation. Cover 1
Romer & Creasy .. Bonesetting and the Treatment of Painful Joints.... Cover 1

SAUNDERS COMPANY:—
Crile & Lower .... Anoci-association 3
Crile & Lower on Anoci-association..... Cover 1

SHAW & SONS:—
McClure .. Handbook of Fevers.. 6

UNIVERSITY OF LONDON PRESS:
Bidwell .... Minor Surgery 6
Cole ..... Mental Diseases 6
Stevens .... Diseases of Women .. 6
Turner & Carling .. Treatment after Operation 6

WRIGHT & SONS (BRISTOL):—
Cammidge.. Faeces of Children and Adults .... Cover 1
Owen ..... Appendicitis..... 6
Pappenheim Clinical Examination of the Blood 6

MEDICAL LIBRARIES, &c.:—
Behnke—Stammering..... 6
Kelley—Stammering 6

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Bedford County Hospital..... 61
Bethnal Green Infirmary..... 63
Birmingham Union—Selly Oak Infirmary 66
Birmingham and Midland Eye Hospital 65
Blackburn and East Lancashire Royal Infirmary 64
Bootle Borough Hospital..... 61
Borough of Hartlepool 66
Borough Hospital, Birkenhead..... 61
Bradford Royal Infirmary 64
Brighton Throat and Ear Hospital 61
Bristol City Asylum..... 61
Chelsea Infirmary..... 65
City of Leeds Hosps. for Infectious Diseases, &c. 66
City of London Hosp. for Diseases of the Chest 62
City of Nottingham—Bagthorpe Institution and Infirmary 61
City of Oxford 63
County Asylum, Dorchester 66
East Sussex County Asylum, Hellingly 63
Elder Dempster & Co., Liverpool.. 67
Essex County Hospital, Colchester 66
Evelina Hospital for Sick Children 62
General Infirmary, Leeds 64
Greenock Infirmary..... 64
Grimsby and District Hospital.... 61
Hexham Rural District Council .. 66
Horton Infirmary, Banbury 62
Hull Royal Infirmary 62
Hulme Dispensary, Manchester .. 61
Ingham Infirmary and South Shields and Westoe Dispensary 61
Kent County Asylum, Maidstone.. 62
Kent County Ophthalmic Hosp., Maidstone 65
King Edward VII.'s Hos., Cardiff. 61
Leeds General Infirmary 64
Leeds Tuberculosis Sanatorium, Gateforth 66
Leicester Royal Infirmary 62
Liverpool School of Tropical Med. 61
London Lock Hospital 64
London Temperance Hospital 66
Manchester Children's Hospital.. 63
Manchester Hospital for Consumption, &c. 63
Manchester Monsall Fever Hosp.. 66
Manchester Northern Hospital .. 61
Manchester Royal Eye Hospital .. 62
Manchester Royal Infirmary 61
Metropolitan Hos., Kingsland-rd.. 63
Newark upon Trent Hospital 66
North Lonsdale Hospital, Barrow-in-Furness 62
Northampton General Hospital .. 62
Northern Infirmary, Inverness .. 66
Nottingham General Dispensary.. 62
Nottingham General Hospital 66
Oldham Royal Infirmary 64
Paddington Green Children's Hos. 66
Parish of St. Giles, Camberwell .. 67
Plymouth Incorporation of Guardians 63
Province of Natal 62
Putney Hospital, Putney Common 62
Queen's Hospital for Children.. 67
Queen's Hospital, Birmingham .. 65

APPOINTMENTS—(Continued).
Reading Education Committee .. 66
Rochdale Infirmary & Dispensary. 61
Romsley Hill Sanatorium for Consumption 65
Royal Albert Hospital, Devonport 62
Royal Cornwall Infirmary, Truro.. 61
Royal Dental Hospital, Leicester-square 63
Royal Eye Hospital, Southwark .. 66
Royal Hampshire County Hospital, Winchester 61
Royal Infirmary, Sunderland 62
Royal Naval Medical Service 67
Royal Portsmouth Hospital 65
Royal Victoria Infirmary, Newcastle-upon-Tyne 63
St. Mary's Hospital, Paddington.. 64
St. Mary's Hosp. Medical School, Paddington 63
St Mary's Hospital for Women and Children, Plaistow 62
St. Mary's Hospitals for Women and Children, Manchester 65
Salford Royal Hospital 64
Salford Union Infirmary 65
Scarborough Hospital and Dispy. 61
Sheffield Children's Hospital 66
Sheffield City Hospitals 66
Siamese Government 63
South African Institute for Medical Research, Johannesburg 63
Southwark Union Infirmary 66
Stafford Criminal Lunatic Asylum, Rexford 64
Stoke-upon-Trent Union 65
Storthes Hall Asylum, Kirkburton 65
Swansea General and Eye Hosp... 64
University of Glasgow 67
Victoria Children's Hospital, Hull 65
Walsall and District Hospital 62
Wandsworth Union Infirmary 67
Warneford, Leamington, & South Warwickshire General Hospital. 62
West Bromwich and District Hos. 62
West Ham and Eastern General Hospital 65
West Kent General Hospital 64
West London Hos.. Hammersmith 64
West Riding County Council..... 66
Weston super-Mare Hospital 65
Woolwich Infirmary 64
York County Hospital 62

ASSISTANCIES, MEDICAL:—
Anchor Line, Liverpool..... 67
Arnold & Sons, Giltspur-street... 67
Evans Sons Lescher & Webb, Ltd. 67
Lawson, Cirencester 67
Lee & Martin, Birmingham 67
Locum Tenens, Ryde 67
Scholastic, Clerical, &c., Assoc... 67
Turner 67

ASYLUMS, HOMES, &c.:—
Ashwood House, Kingswinford .. 53
Association of Medical Men Receiving Resident Patients 60
Bad Neuenahr, Sanatorium..... 60
Barnsley Hall, Bromsgrove..... 53
Barnwood House Hospital 64
Bishopstone House, Bedford..... 53
Bootham Park, York 53

ASYLUMS—(Continued).
Brunton House, Lancaster..... 60
Buntingford House Retreat, Buntingford 67
Camberwell House, Peckham-road 56
Cheadle Royal..... 64
City of London Mental Hospital, Stone..... 60
Clarence Lodge, Clapham Park .. 53
Colthurst House, Alderley Edge .. 60
Coppice, The, Nottingham 64
Cupola Nursing Home, Hayling Island 61
Dainton, Bromley 61
Dairymple House, Rickmansworth 57
David Lewis Colony, Alderley Edge 60
Duff House, Banff..... 58
Farnham House, Dublin 57
Ghyllwoods 57
Grove House, Church Stretton.... 54
Grove, The, Catton, Norwich..... 54
Haslemere Nursing Home 61
Haydock Lodge, Newton-le-Willows 55
Heigham Hall, Norwich 54
Home for Epileptics, Maghull 60
Invernith Sanatorium, Colinsburgh 57
Kingsdown House, Box..... 61
1066, Ringmay 61
Littleton Hall, Brentwood 61
London Fever Hospital..... 54
London Sanatorium..... 56
Mailing Place, Kent..... 54
Manna Mead, Blackheath 60
Marrville, Dublin 58
Melbourne House, Leicester 60
Mendip Hills Sanatorium 57
Middleton Hall, Co. Durham..... 55
Moat House, Tamworth 54
Newlands House, Tooting Bec Common 53
Newmains Retreat, Lanarkshire.. 57
New Saughton Hall, Polton, Midlothian 55
Nordrach-on-Dee, Banchory 58
Northumberland House, Finsbury Park 55
Northwoods House, Winterbourne 55
Norwood Sanatorium, Ltd..... 56
No. 398, L.O., Strand 61
Oehli Hills Sanatorium..... 56
Osea Island, Heybridge..... 56
Otto House, West Kensington 60
Peckham House..... 56
Pendyffryn Hall Sanatorium, Nordrach-in-Wales 58
Pinewood Sanatorium, Wokingham 57
Plympton House, Plympton 54
Portsmouth Corporation Mental Hospital 53
Royal Earlswood Institution for Mental Defectives 58
St. Andrew's Hospital, Dollis Hill 61
St. Andrew's Hosp.. Northampton 54
St. George's Hospital, Burgess Hill 60
St. Luke's Hospital for Mental Diseases 57
Springfield House Private Asylum, Bedford 53
Stretton House, Church Stretton. 54
The General Manager, Craven-st. 61

ASYLUMS—(Continued).
The Grange, near Rotherham 54
Vale of Clwyd Sanatorium 59
Warneford Asylum, Oxford..... 53
Wye House, Buxton 54

FINANCIAL, &c.:—
Equitable Reversionary Interest Society..... 51

HEALTH RESORTS, BATHS, &c.:—
Alexandra Therapeutic Institute.. 60
Assouan and Luxor ..... Cover 111
Bad Wildungen 59
Biarritz Thermal Establishment .. 59
Droitwich 60
Eaux Bonnes 59
Smedley's, Matlock 60
Somvix Valley (Grisons) 59

HOTELS:—
Hotel Windsor 60

HOUSE & ESTATE AGENTS:—
Bedford & Co., Wigmore-street.... 63
Boswell & Tomlins, Wolverhampton 62
Elliott, Son & Boyton, Vere-street 62
Estate Office, Finchley-road 60
Ley Clark, Wimpole-street 60
No. 103, L.O., Strand 60

LIFE & FIRE ASSURANCES, &c.:—
General Life Assurance Co. 51
National Provident Institution .. 50
Prudential..... 50

MASSAGE:—
Associated Male Nurses and Masseurs 52
London School of Massage 52
School of Massage and Swedish Remedial Exercises..... 52

MEDICAL ACCOUNTANTS, &c.:—
Turner..... 68

MEDICAL AGENTS:—
Fieldhall, Limited 70
Johnson 72
Manchester Clerical, &c., Assoc.. 73
Medical Agency 72
Needes, Herbert 73
Needes, J. C. 72
Peacock & Hadley 69
Scholastic, Clerical, &c., Assoc. .. 71
Turner..... 70

MEDICAL SCHOOLS:—
(LONDON.)
Guy's Hospital Medical School. .. 48
King's College Hospital Medical School 49
London School of Clinical Medicine 50
Medical Graduates' College and Polyclinic 46
St. Mary's Hos. Medical School .. 48
University of London, King's College..... 47
West London Post-Graduate Coll. 47
(PROVINCIAL, &c.)
Glasgow Royal Infirmary..... 48
University of Sheffield 49

For continuation of Index to Official and General Announcements, and Trade and Miscellaneous Advertisements, see page 4.

READY TO-DAY.

Crile and Lower on Anoci=association

THE SHOCKLESS OPERATION.

Anoci-association is the *prevention* of post-operative shock—not its treatment. Anoci association robs surgery of its harshness, diminishes post-operative mortality, lessens post-operative complications (shock, nausea, vomiting, gas pains, backache, nephritis, pneumonia, etc.).

You get here, first of all, a monograph on *shock*—its kinetic theory, its histologic and clinical pathology, and its treatment. Then follow chapters on the principles of *anoci-association;* the technique of *its application* in the administration of the anesthetic in abdominal operations (gall-bladder, gastric, intestinal operations, herniotomy, perineal operations, abdominal infections, appendicitis, pelvic infections); in gynecologic operations (tumors, suspension of uterus, pus tubes), in genito-urinary work (bladder, kidney, prostate); in operations for cancer of the breast, rectum, stomach, uterus, larynx, and tongue; in exophthalmic goitre operations; in operations on the brain and the extremities (amputations, osteotomy, accidents).

Then come chapters on *anoci-association* and *blood-pressure*, the relation to post-operative morbidity and mortality, and the technique of nitrous-oxid-oxygen anesthesia, with details for equipping a hospital plant for the manufacture of nitrous oxid.

"To the great discoveries of Morton and of Lister this of Crile seems to be the fitting completion."—SIR BERKELEY MOYNIHAN in the Address in Surgery at the Annual Meeting of the British Medical Association, 1913.

Octavo of 260 pages, illustrated. By GEORGE W. CRILE, M.D., F.R.C.S., Professor of Surgery, and WILLIAM E. LOWER, M.D., Associate Professor of Genito-Urinary Surgery, Western Reserve University. Cloth, 13s. net.

Ask to see this and other New Books at Stand No. 55, B.M.A. Meetings, Marischal College, Aberdeen, and Stand No. 18, Clinical Congress of Surgeons, Hotel Cecil, London, July 27th to 31st.

W. B. SAUNDERS COMPANY

9, HENRIETTA STREET, LONDON, W.C.

INDEX—(CONTINUED).

PAGE

NURSING INSTITUTES:—
Army and Navy Male Nurses Co-operation ... 51
Certificated Nurses Association ... 53
Co-operation of Temperance Male and Female Nurses ... 52
General Nursing Association ... 52
Hospital for Sick Children ... 51
Leeds Trained Nurses' Institution 51
London Nurses' Association ... 53
London Temperance Male and Female Nurses Co-operation ... 52
Male Nurses Temperance Co-operation ... 51
Mental Nurses' Co-operation ... 51
New Mental Nurses' Co-operation. 53
Nurses' Co-operation, Portland-place ... 51

PAGE

NURSING INST.—(Continued).
St. John's House ... 51
St. Luke's Hospital ... 52
Temperance Association of Male Nurses, Ltd. ... 51
Temperance Male Nurses Co-operation ... 52
Temperance Male and Female Nurses Co-operation ... 52

OFFICIAL NOTICES:—
Central London Throat, Nose and Ear Hospital ... 50
City of London Lying-in Hospital.. 50
Guy's Hospital ... 48
Hospital for Sick Children, Great Ormond-street ... 48

PAGE

OFFICIAL NOTICES—(Continued).
London School of Tropical Medicine ... 48
Medical Graduates' College and Polyclinic ... 47
North-East London Post-Graduate College ... 47
Queen Charlotte's Lying-in Hospital ... 50
Royal (Dick) Veterinary College, Edinburgh ... 50
Royal Eye Hospital, Southwark .. 49
St. Bartholomew's Hospital and College ... 47
University of Birmingham ... 48
West End Hospital for Diseases of Nervous System ... 49

PAGE

PARTNERSHIPS & PRACTICES 50
RAILWAY & STEAMSHIP CO.'S:—
Great Eastern Railway Co.—
Week-End in Holland ... 50
Week-End in Belgium and Holland ... 50
New Zealand Shipping Co. ... 50
SCHOOLS, PREPARATORY, &c.:—
Agricultural College, Aspatria 49
British and Foreign Schools Agency, Manchester ... 49
The Grange, Folkestone ... 50
TUTORS & LECTURERS:—
Med. Corres. College ... 50 | Stammering .. 5 Weymouth 50, 60

TRADE AND MISCELLANEOUS ADVERTISEMENTS

AMBULANCES:—
St. John Ambulance—
Invalid Carriages ... 9

BOTTLE MERCHANTS:—
Isaacs ... 73

CARRIAGES, MOTORS, &c.:—
Armstrong—
Coachmen's, Grooms', and Chauffeurs' Liveries ... 9
Clement Talbot, Ltd.—
Invincible Talbot ... 9
Morgan & Co.—
Morgan-Adler Carette ... 9

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Byno Hypophosphites ... 33
Solurol ... 32
Anglo-American Pharmaceutical Co.—
Huxley's Syrup Formates with Glycero-Phosphates ... 22
Antikamnia Chemical Co.—
Antikamnia ... 24
" & Codeine Tablets 24
Bristol-Myers Co.—
Sal Hepatica ... 45
British Organotherapy Co., Ltd.—
Ovamammoid Compound ... 20
British Oxygen Co.—
Oxygen ... 48
Browning & Co.—
Semproin Emulsion ... 28
Bulloch & Co.—
Pepsina Porci ... 46
Acid Glycerine of Pepsine ... 46
Burroughs Wellcome & Co.—
Laxamel ... 37
Carnrick & Co.—
Liquid Peptonoids ... 35
Christy & Co.—
Glyco-Thymoline ... 26
Ergoapiol ... 44
Cook & Co.—
Soap "Biscuit" ... Cover ii
Cordes Hermanni & Co.—
Ichthyol ... 45
Denver Chemical Mfg. Co.—
Antiphlogistine ... 19
Dinneford's Fluid Magnesia ... 8
Fletcher, Fletcher & Co.—
Endolytic Tubes ... 39
Gale & Co., Ltd.—
Entrapuro ... 44
Sugonum ... 44
" Antiseptics ... 44
Heppel & Co.—
Filudine ... 34
Globeol ... 34
Jubol ... 34
Urodonal ... 34
Howlett & Son—
Mist. Hepatica Conc. ... 21
Humphrey Taylor & Co.—
Junora ... 27
Lecithin-Ovo ... 27

CHEMISTS—(Continued).
Ingram & Royle—
Natural Carlsbad Sprudel-Salt 25
Lambert Pharmacal Co.—
Listerine ... 45
Maltine Manufacturing Co.—
Maltine c. Pepsin and Pancreatin ... 35
Martindale—
Erythrol Nit. Tablets .. Cover iv
Amyl Nitrite Capsules.. " iv
Sterutes ... " iv
Roskrow Natural Water " iv
Bismuth - Sodii - Salicyl - Salol Pills ... Cover iv
Tylcalsin & Tyllithin " iv
Standardised Thyroid Preparations ... Cover iv
Meister Lucius & Brüning—
Valyl-"Hoechst" ... 19
Sabromin ... 19
Pegnin ... 19
Migrainine ... 19
Melubrin ... 19
Amphotropin ... 19
Ferrosajodin ... 19
Mertens—
Electric Colloidal Metals ... 21
Newbery & Sons—
Pulvis Jacobi Ver. ... 43
New York Pharmaceutical Co.—
Hayden's Viburnum Compound ... 24
Parke, Davis & Co.—
Rheumatism Phylacogen 31
Pharmaceut.-Fabrik "Stein"—
Valbromid ... 42
Raimes & Co.—
Slinger's Nutrient Suppositories ... 42
Roberts & Co.—
Képhir Rallières ... 44
S. P. Charges Co.—Sulphaqua 44
Welford & Sons—
Sauermilch ... Cover iii
Wright, Layman & Umney—
Wright's Coal Tar Soap ... 28
Wulfing & Co.—
Formamint ... 18
Cystopurin ... 23
Zimmermann, A. & M.—
Schering's Medinal ... 20
Schering's Valisan ... 20
Atophan ... 20
Sperminum Poehl ... 16
Orexin ... 46
Zimmermann & Co.—
Lenicet ... 78

DISINFECTANTS:—
Jeyes' Sanitary Compounds Co.—
Jeyes' Disinfectants ... 25
Zimmermann & Co.—
Lysol ... Cover ii

ENGRAVERS (NAME PLATES) &c.—
Cooke & Co.—
Brass Name Plates and Lamps 10
Osborne & Co.—
Brass Door Plates ... 9

FOODS:—
Aylesbury Dairy Co.—
Humanised Milk ... 38
Benger's Food, Ltd.—
Benger's Food ... 29
Blatchley's Diabetic Preparations 46
Bonthron & Co.—
Biogene Cocoa ... 8
Charcoal Biscuits ... 8
Brand & Co.—
Essence of Beef ... 43
Callard & Co.—
New Diabetic Foods ... 42
Casein Limited—
Secwa ... 42
Dietsch & Co.—
Soxhlet's Food Preparations .. 74
Fry's Malted Cocoa ... Cover iii
Hommel's Hæmatogen—
Hommel's Hæmatogen ... 18
Horlick's Malted Milk Co.—
Malted Milk ... 18
Maconochie Bros.—
Pan Yan Pickle ... 43
Manbu Food Co.—
Manbu Diabetic Foods ... 8
Mellin's Food, Ltd.—
Mellin's Food ... 14
Nestlé's Milo Food Dept.—
Milo Food ... 43
Valentine's Meat Juice Co.—
Meat Juice ... 74
Van Abbot & Sons—
Gluten Flour ... 46
Wander, Ltd.—
Ovaltine ... 30
Wulfing & Co.—
Albulactin ... 22

FURNITURE, &c.:—
Carter—
St. Leonards New Model ... 12
Southsea Wicker Spinal Carriage ... 12
Maple & Co.—
Roll Top Desks, Bureaux, Writing Tables, &c. ... 13

HOSPITALS (ISOLATION):—
Browne & Lilly—
Revolving Chillets, &c. ... 69

MED. & SURG. APPLIANCES:—
Bailey & Son—
Patent Belts, Trusses, and ElasticStockings ... 41
Surgeons' Midwifery Case 41
" Bottles ... 41
Cocking—
Adaptable Poro Plastic Jackets and Splints ... 75
Davis—Lukens Sterile Catgut 11
Hogg & Son—
Improved Steam Vaporisers .. 10
Holland & Son—
Patent Instep Supports Cover iii
Medical Supply Association—
Bergonie System of Treating Obesity ... 10
Millikin & Lawley—
Osteology, &c. ... 10

MED. APPLIANCES—(Continued).
Original Quartz Lamp Company—
Artificial Mountain Sun ... 17
Robinson & Sons—
Capsicum Gamgee Tissue 10
Southall Bros. & Barclay—
Accouchement Sheets ... 11
Southalls' Towels ... 11
Tenax ... 11
Surgical Manufacturing Co.—
The Surgman High Pressure Sterilisers ... 39
Timpson & Co.—
Zo Adhesive Plaster ... 8
Vincent Wood—
Eureka Crêpe Velpeau Bandages ... 9
Zeal—Repello Thermometer ... 10

MINERAL WATERS:—
Davis—Tarasp Water ... 46

OPTICIANS:—
Leitz—
Prism Binoculars ... 38

TAILORS, BOOTMAKERS, &c.:—
Burberrys—
The Burberry ... 15

TOBACCO, CIGARS, &c.:—
Ardath Tobacco Co., Ltd.—
State Express Cigarettes ... 15
Player & Sons—
Perfectos Cigarettes ... 42
Vallora Cigarettes ... 8

TYPEWRITING, &c.:—
Yost Typewriter Co.—Yost ... 11

VACCINE LYMPH:—
Jenner Institute for Calf Lymph.. 11
Roberts & Co.—
Chaumier's Calf Lymph ... 11

WATCHMAKERS, &c.:—
Benson, Ltd.—
"Field" Watch ... 10

WINES, BEER, SPIRITS, &c.:—
De Kuyper's Hollands ... 14
Humphrey Taylor & Co.—
"H.B." Diabetes Whisky ... 27
Whiteway's Ciders ... 12

X-RAY, &c., APPARATUS:—
Sanitas Electrical Co.—
X-Ray Apparatus, &c. ... 15

MISCELLANEOUS:—
A., Lea Bridge-road—
Surgical Instruments ... 69
Bayleys, Ltd.—
De Dion Motor Car ... 69
Page, Catford—Translations ... 68
Patourel, Crosby-on-Eden—
Goats' Milk ... 69
Portman Income Tax Relief Agency ... 68

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith & Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other advertising Agents.

ADVERTISING.

Books and Publications	Five Lines and under £0 4 0
Official and General Announcements	
Trade and Miscellaneous Advertisements and Situations Vacant ...	Every additional Line 0 0 6

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Special terms for Position Pages.

A Lecture
ON
LOCALISATION OF MOTOR AND SPEECH CENTRES IN DEFINITE AREAS OF THE CORTEX OF THE BRAIN.

Delivered in the Physiological Laboratory of the University of London on June 8th, 1914,

BY EUGENE DUPUY, M.D. PARIS, &c.

GENTLEMEN,—The oldest localisation established is Flourens's "nœud vital," the seat of the principle of life in his language. He showed that a mere prick, and much more the removal of the nib of the calamus scriptorius, induces immediate death by sudden arrest of both respiration and circulation. But many years after Brown-Séquard showed by experiment that the nib of the calamus could be destroyed without inducing cessation of life, and I have collected a number of pathological observations, amongst others one published by Thiroloix and another by Professor Marinesco, which are most interesting, showing also that destruction of the "nœud vital" does not destroy life in man.

Later, in 1861, another localisation established was that of the faculty of articulate speech by Broca in the foot of the left third frontal convolution; he had had precursors, amongst others Bouillaud and Dax, father and son. This localisation was founded on pathological observations, and the three brains which Broca showed are at present —where they have been preserved from the beginning—in the Museum of Pathological Anatomy in Paris; they are to be seen every day. They show that they never have been *opened*—i.e., cut into sections—so that it is impossible to say what other lesions exist, if any, beside those seen on the surface of those brains.

It was in the early "seventies" that Fritszch and Hitzig showed by experiment that there exist in the convolutions of the brains of dogs certain spots which when irritated by means of galvanic currents give rise to definite movements of the limbs in a cross manner—that is, irritation on the right hemisphere provoked movements in the left limbs and *vice versâ*. Hitzig later brought forward some observations of lesions of those parts in man corroborating these experimental results; but it does not appear that much interest was raised on those facts until three years later, when came the first researches of my eminent colleague, Sir David Ferrier, who soon after, in his epoch-making work on the "Functions of the Brain," established both from experimental and pathological data the "doctrine"—for such it has been christened by Charcot—of the localisation of the functions of the brain. Hughlings Jackson, as is well known, had already shown in his studies—which must be recalled as models of clinical observations—the sequence of events from lesions of certain areas of the brain in the hemiplegia and epilepsy following.

CRITICISM OF THE DOCTRINE OF LOCALISATION.

Ever since one may say that the universal teaching has been that every convolution of the brain, and even every definite area of them, contain motor or sensory centres from which start the influence which animates, not only whole limbs on the opposite side of the body, but their different segments, and even the smaller organs, the thumb, for instance. The doctrine comprises the pyramidal tracts with their decussation, through which is effected the crossed action of the hemispheres on the spinal cord; since Mistichelli's time it has been universally adopted by all physicians and physiologists. With regard to loss of articulate speech, the doctrine is that destruction of Broca's convolution alone—it being the seat of the faculty of articulate speech in the left hemisphere for right-handed persons and in the right for left-handed—is the cause of aphasia; and later on Wernicke established that other form or so-called sensory aphasia, having its seat in the left temporal-parietal lobe of the brain also like Broca's aphasia.

I was struck at the very beginning of my medical studies and experimental work with certain facts which did not allow acceptance of the teaching prevalent. I had seen when attending in the post-mortem room—on some rare occasions it is true—Broca's convolution destroyed, and yet the patient had shown no signs of aphasia. I had seen rarely also hemiplegia happening on the same side as the lesion in the brain. Brown-Séquard, with whom I became acquainted at that time, had already been, much to my surprise and gratification, busy for some 15 years before collecting such cases and trying to explain their non-conformity with the accepted teaching by denying the theory of continuous conduction from certain areas of the hemispheres down through the crossed pathways of the pyramids to the spinal cord. He was teaching at that time that lesions of the brain, besides the one we saw, exerted an influence in distant parts which caused the paralysis observed—if I am not mistaken, the same theory which is now introduced by von Monakow under the name of diachisis.

I hold, however, that a doctrine is only true if it comprises in its scope all the facts, and that if one only well-observed fact is found to be contrary then the truth of the doctrine is reversed, to say the least. There are such facts which I believe absolutely vouched for; and, as I will show, the explanations given to make them enter into the classical "frame" are not by any means acceptable. Let me, for instance, state the case of hemiplegia on the same side as the lesion in the brain. There are many on record; one of the earliest, of which the publication seems to have been prompted by Brown-Séquard's teaching, is recorded by Dickinson, of Liverpool.

HEMIPLEGIA WITH BRAIN LESION ON SAME SIDE.

It is the case of a woman who was found on admission into the hospital to be in a state of coma; as there was a smell of alcohol in the expired air the stomach was pumped out. At the first return of consciousness there were vigorous efforts to put aside the instrument, and it was then noticed that in such efforts the *right hand*[1] only was used; on further pinching or pricking the surface of the body the whole of the *right side* responded pretty freely, but the *left* little if at all, only the slightest motion of the finger ends being perceptible. On the following morning, when the doctor saw the patient, she could move the *left arm* and *leg* slightly, though there seemed great reluctance and tardiness in doing so. There was evidently considerable loss of power, with somewhat diminished sensibility and reflex action on that

[1] No italics in Dr. Dickinson's text.

side of the body. The functions of the *right side* seemed apparently perfect. There was complete ptosis of the *left eyelid* with external strabismus, distinctly marked paralysis of the *left* third nerve; the tongue was protruded straight. The patient was rational and able to articulate freely, and could even give some little account of herself when roused and pressed for a reply to questions. Later on the patient was able to walk across the ward, though she dragged the *left leg* a little and the *left arm* hung at her side. She made some more progress towards recovery to the point of being able to change her linen by herself and insisted upon going home. Then she suddenly became stupid and had to be lifted in bed, and soon became comatose. There still remained some slight reflex action and muscular response to pricking or pinching on the surface of the body except on the *left side*, the sensibility of which limbs seemed incomplete, or at any rate there was total loss of motor power in the limbs.

At the necropsy no fracture, contusion, or other evidence of external injury was found. On removal of the calvarium and opening the dura mater, which was healthy and entire, a considerable quantity of extravasated blood, amounting perhaps altogether to about three ounces, was found spread out in a layer on part of the lateral surface of the *left* hemisphere and lying in the cavity of the arachnoid. The excavation was entirely *confined to the left side*, and extended downwards along the Sylvian fissure to the base of the brain, where a small clot the size of an ordinary horse bean was seen pressing upon the trunk of the left third nerve. The blood effused was for the most part dark, clotted, and firm, and presented a somewhat shrunken and honey-combed appearance as if it had existed for a good many days. About the centre, however, of the *left* parietal lobe there was quite a fresh-looking and semi-fluid clot of about an ounce in bulk, but lying more superficially upon what appeared to be the older extravasation and gradually tailing off in quantity down the fissure of Sylvius. No rupture of the arachnoid could at first sight be discovered, nor any special focus from which the hæmorrhage might have sprung. Prolonged search showed that the origin of the hæmorrhage was evidently from the rupture of a small branch of the middle cerebral artery, situated in the *left parietal* fissure. The lateral parietal convolutions of the *left hemisphere* were slightly flattened and their surface deeply stained with blood, where the clot had pressed upon them. Nowhere, however, was there any irruption into the substance nor disturbance of the pia mater and arachnoid except at the bleeding point above indicated. The ventricles opened showed in the right one only a little fluid amounting to about 1½ drachms of clear serum. The whole of the *right hemisphere*, both in its superficial and internal structure, was most minutely and accurately examined and portions of it microscopically, but with the exception of the small quantity of serum in the ventricle no lesion or abnormality whatever was discernible, nor had the effused blood come in contact at the base, or at any point, with the surface of this side of the brain. The crura cerebri, pons Varolii, cerebellum, medulla oblongata, and upper portion of the spinal cord were also very carefully examined, but without revealing anything of an unusual character. It is to be specially noticed that the decussation of the anterior pyramids of the medulla was very well marked in the fresh state, and the parts having been hardened and afterwards examined microscopically exhibited no appreciable deviation in the crossing and arrangements of the fibres from the appearances universally recognised as normal.

CONCLUSIONS FROM ABOVE AND OTHER CASES.

I have given this case in such length with details because of its importance. It does not seem necessary to enlarge on the fact that we have here a case of which the features are absolutely contrary to the teaching universally adopted; and I have chosen that one case out of many others published since on account of the extreme care with which it has been studied by the author, it being the first in which microscopic examination was ever done. Similar observations regarding the importance of the pyramid decussation only have been made by Vulpian, who showed that the destruction of these strands of fibres *does not* prevent the conduction of motor impulses from the brain to the spinal cord.

Other cases have been observed in great number in which it has been often found that the tumour or hæmorrhage had caused œdema in the opposite hemisphere, much stress has therefore been laid on this fact to prove that motor symptoms observed were to be attributed to that œdematous hemisphere only. Not only does this œdematous condition not exist in all the cases observed, but if such were the rational interpretation it would follow that the hemisphere on the same side as the motor symptoms had no function at all, since it is found destroyed without motor symptoms occurring on the opposite side. In the case of Dr. Dickinson, however, it is specially noticed that no such œdematous condition existed, nor can the little serum found in the ventricle be considered sufficient to account for the motor phenomena; there are so many cases on record to the contrary. Therefore the elements of the localisation doctrine as regards the effects of motor impulses from the centres in the hemispheres along continuous strands of fibres crossing in the medulla pyramids are not in accordance with well-ascertained facts, and must be accordingly rejected.

RESULTS OF EXPERIMENTS AND PATHOLOGICAL OBSERVATIONS.

Let me now come to the convolutions of the cortex and report some results of experiments and observations of pathological facts.

First, it is not irrelevant to state that lesions of both hemispheres in almost the same ratio cause paralysis in the opposite side of the body. In the first 600 cases of hemiplegia which I have collected 260 show lesions in the right hemisphere, from which fact we may conclude that there is no difference in the functions of the two halves of the brain. Now it occurs, as is universally known, that in the Rolandic areas centres exist the irritation of which causes definite movements in the limbs on the opposite side, while destruction of that particular area brings about a paresis, or at all events awkwardness in that limb; but after some time this paresis or awkwardness disappears. It is said then that the corresponding or homologous area in the other hemisphere has taken up the lost function because it had been ascertained that such "suppléance" could not be found to exist in the surrounding parts of the destroyed "centre," a fact which went a long way to show the well-defined localisation in a given centre. But other

experiments have been done which do not allow such a theory, for Carville and Duret, as I had also shown, found that, say, the right foreleg of the dog had recovered from the paresis or awkwardness following the destruction of its so-called centre, then if the corresponding or homologous centre in the right hemisphere is destroyed no paresis or awkwardness returns in the right foreleg, but in the left foreleg only. Therefore the explanation is not acceptable.

It is not possible to perform such experiments in man, but there are at present a great number of pathological cases which point the same way; for instance, the numerous operations performed by surgeons to remove the cause of convulsions or contractures—cases which show that the so-called motor centres for the arm, for instance, or the hand having been removed, not only the convulsion or contracture disappeared but no paralysis ensued. I have collected 47 well-studied cases of this sort, and the one which is recorded in Sir Victor Horsley's Linacre lecture is certainly most interesting. As the mind is so fashioned that it does not seem ever willing readily to abandon adopted theories, it is supposed only automatic movements are retained after those operations, since those movements are said to have their seat in other or lower centres than the cortex, but that willed or newly acquired movements would always be lost. This instance shows once more how dangerous it is to predict, because I have shown as far back as 1873 that in dogs when the "centres" for the movements of the foreleg and paw have been removed, not only do the leg and paw recover, but tricks can be performed, either tricks learnt before or after the operation. I am happy to find that my distinguished colleague Professor C. S. Sherrington has very lately been able to show that in the chimpanzee the same results are obtained.

It is but reasonable, therefore, to admit that the so-called motor centres are not necessary for the normal functional activity of the parts which they are said to govern, and yet it is not possible to deny that irritation, produced by experimental methods in animals and by disease in man, is followed by movements or paresis in the limbs. It is to an explanation of the mode of production of those that I shall devote the time you are patiently according me. I have collected several more or less well-studied cases in which a very large portion of one hemisphere had been destroyed by disease without paralysis having been noticed in the patient.

LOCALISATION IN REGARD TO LOSS OF SPEECH.

Allow me now to speak of localisation in regard to loss of speech. Up to six years ago I may say that all were in agreement that speech depends upon Broca's convolution in the left hemisphere only for right-handed persons, and in the right hemisphere for left-handed persons. The other form of aphasia, so-called sensory or Wernicke's (Bastian had before called attention to that species), also conforms to this rule, and its seat is placed in the temporo-parietal cortex. It is true that some writers have not altogether from the beginning taken for proved this theory of aphasia, and that even so early as two or three years after Broca's publications Bateman and Charcot, among others, published observations contrary to absolute acceptance of the rule; and let those who wish to learn more on the matter or refresh their learning read Trousseau's immortal lectures not only for a knowledge of the whole subject at the time, but also because Trousseau is the first who clearly saw and taught that aphasia is a disorder of the motor as well as of the intellectual activity of the brain. I have, as I said before, even during my student days found cases that did not confirm Broca's so-called law. In the course of succeeding years I found other cases also contrary, to which I called attention in the lectures that I delivered in different American colleges and societies. In 1891 I read a paper before the Neurological Society in London in which I particularly laid stress on the fact that pathological observations conclusively proved that Broca's convolution had nothing to do with aphasia.

It was only seven years ago, when Professor Pierre Marie, covering the same ground, wrote his paper that created such a sensation among neurologists, that the subject attracted universal attention, presumably because the hour had come. He did not only confine himself to denying or disproving Broca's localisation in the foot of the third left frontal convolution, but he also tried to show that what we call aphasia is composed of different conditions—one the loss of power of pronouncing words, and the other the loss of comprehension and understanding, or sensory aphasia so-called. He endeavoured to establish the seat of the real lesion of aphasia in that part of the temporo-parietal lobe which he defined in a quadrilateral space including Wernicke's convolution and deeper parts. I go with him in denying the function, so-called, of Broca's convolution, since, as I have already said, a great number of cases in which this had been destroyed with no aphasia had been recorded, but I also must disbelieve that the quadrilateral space he mapped out contains the centre of the speech faculty for the same reason: that this has been found destroyed when no aphasia existed. I have collected several such cases. And there are other arguments.

Karl Mendel has lately recorded the case of a woman aged 42 who was certainly right-handed and of whose relatives none were ever left-handed. She became paralysed on the whole of the left side as the result of an embolus from cardiac disease and had complete motor so-called aphasia. The lesion was found at the necropsy to be embolic softening of the right inferior frontal convolution, the right island of Reil, and the right superior temporal convolution. A microscopical examination was made of both hemispheres, and the lesions above described were the only ones found; the left hemisphere was intact, and the pyramidal tracts were normally crossed in the lower part of the medulla. The author concludes that this is a case in which the motor (Broca's) speech centre is placed in the right hemisphere in a right-handed person; but as there had been neither sensory (Wernicke) aphasia nor nonagraphia, the sensory speech centre must be localised in the left hemisphere, seeing that the right superior temporal gyrus was destroyed. If ever there was an example of begging the question I believe this is one. Since the superior temporal convolution in the right side was destroyed and no symptom observed, then that portion of the brain had no function, and why should one be asked to accept this saying after it has been so well recorded that motor aphasia, Broca's, was produced by destruction of the third frontal in this same hemisphere?

I have seen with Luys, who published the record of the case, a very remarkable instance of the immense difficulty, not to say impossibility, of

establishing the fact that loss of speech is due to destruction of those so-called centres. In this case there was softening destroying the posterior portion of the third frontal convolution, all the insula convolutions had disappeared, the ascending frontal and parietal at their junction were destroyed; the first temporal was broken down, all the cortex of the insula group and marginal convolutions around were destroyed; the grey substance of the corpus striatum extraventricular nucleus was destroyed, and only vestiges of the intraventricular nucleus probably existed. There was complete motor aphasia, and please mark, 18 months after the stroke the patient all at once, without preparation, began suddenly to speak.

MECHANISM OF SYMPTOMS IN BRAIN LESIONS.

I have made this observation in this place as its lesson will lead me naturally to offer the explanation which I believe is the rational one of the mechanism of symptoms in brain lesions. I do not wish to be understood to say that the cortex has no function, but I wish to state clearly that the area of the seat of definite function, as the doctrine universally adopted will have it, is erroneous. In the light of the examples which I have reported it appears that there are no supplemental centres, but that all the cortex is endowed with the faculty of acting in specific and differentiated manner, and that at most disease or destruction of a given area brings on, say, motor paralysis or aphasia by an inhibitory influence, acting both on other parts of the cortex as well as on the ultimate processes, to the nucleus of the nerves which through the muscles manifest the functions externally. This inhibition would naturally imply alterations of the muscular sense. Brown-Séquard for the last 20 years of his life endeavoured to introduce that theory in science, and I do not know that many followed him. I cannot see any other hypothesis that will account more satisfactorily for all the different manifestations of lesions of the brain; and now let me give a last instance.

A man was found to have in a very short time become amaurotic in one eye. This condition lasted 13 months, and no morbid symptom existed anywhere except a discharging abscess from one tooth in the upper jaw, which, having become a real infirmity, was drawn out. It was found that in its root canal lay a sharp thin spindle of wood from a toothpick which the patient had used in order to cure the tooth which was decayed and which was evidently the cause of the recurrent abscesses. But in a very short time, three days in all after the withdrawal of the tooth, sight had returned completely in the amaurotic eye. Here it is no exaggeration to state that the lesion of the nerve of the tooth induced by inhibition the amaurosis.

Inhibition is not a process of a mysterious nature. It does not consist either, as Claude Bernard taught, in a phenomenon of interference familiar to physicists, nor do I believe it to consist in the action of a synapse, for that implies an organ with a special function, whereas inhibition is a property of the whole nervous system, and one cannot imagine an organ generated by an irritation. But it is most presumably, as Brown-Séquard taught, "une transformation de forces." As I have never seen a lesion made in the brain cortex in any special area not followed by distant and appreciable alteration of tissue elsewhere, it appears to me that by such a process the activity of parts may be altered or inhibited, and one proof thereof consists in the fact that there always elapses a certain length of time before the manifestation of inhibition after irritation and before the restoration of the activity in the part inhibited after the removal of irritation. I do assure you that I have no pretention to have settled for ever the question of the functions of the cortex, but I beg you who have so patiently listened to me to consider, if even with the critical eye, the facts and arguments I have laid before you.

A REDUCTION IN THE VIRULENCE OF TUBERCLE BACILLI STORED IN NORMAL SALINE.

BY LEONARD S. DUDGEON, F.R.C.P. LOND.

(*From the Department of Pathology, St. Thomas's Hospital.*)

IN this preliminary communication certain experiments will be cited which show the effect of storage on the pathogenicity of the tubercle bacillus. It is important at the outset to emphasise that the different results produced refer to the effect of the inoculation of definitely known quantities of the tubercle bacillus. Four strains were employed of the untreated bacillus, while the organism which was used in the experiments included in Group 4 had been previously treated with immune tuberculous serum in the manner about to be indicated. In each instance the cultures of the tubercle bacillus isolated from a human source were obtained from the sputum of cases at the Brompton Hospital Sanatorium at Frimley, for which I am indebted to the kindness of Dr. W. O. Meek, the superintendent. Further observations on this subject will be published at a later date in conjunction with Dr. Meek.

The sputa were passed through guinea-pigs, and the viscera of the infected animals were sown on Dorset's egg medium. When an abundant growth was obtained, which was usually in about three to four weeks, it was carefully scraped off the surface of the medium, partially dried to remove surplus water which had condensed on the bacilli from the medium, and carefully weighed on sterile platinum foil. The masses of bacilli were then shaken with a definite quantity of sterile saline[1] and some glass beads until a uniform emulsion was obtained, which was finally stored in dark brown bottles and kept in a dark cupboard at room temperature so that each sample was kept under identical conditions. Definite quantities were removed at various times, inoculated into animals and the results carefully noted.

The method employed in the preparation of the treated tubercle bacilli has been referred to elsewhere,[2] but it may be mentioned here for convenience that after the bacilli had been scraped off the surface of Dorset's egg medium they were partially dried, weighed, and then shaken in sterile saline to break up the clumps. The saline was pipetted off, and the solid residue was thoroughly mixed in 2 c.c. of sterile saline so that a very turbid suspension of bacilli was obtained to which 2 c.c. of immune rabbit serum were added and the total mixture was incubated at 37° C. for 20 hours and

[1] 0·9 per cent. pure sodium chloride in tap water.

[2] A Contribution to the Study of the Complement-Fixation Reaction in Tuberculous Animals, by L. S. Dudgeon, Journal of Hygiene, vol. xiv., No. 1, 1914.

kept at room temperature for 4 hours. The bacilli were then thoroughly washed in sterile saline and finally suspended in that medium and stored in brown bottles as already indicated.

SERIES I.

Culture of the human bacillus obtained from the tissues of a guinea-pig which developed generalised disease within a period of three weeks from the inoculation of human sputum. When this bacillus was injected intravenously into two rabbits in doses of 3 mgm. and 1·5 mgm. respectively, it was found to have the usual pathogenic properties common to the human bacillus for the rabbit. At the same period two guinea-pigs were infected with similar quantities of the bacillus and developed generalised tuberculosis of an advanced type within a period of four weeks.

Effect of 3½ months' storage.—Two guinea-pigs were inoculated subcutaneously as follows: one animal received 3 mgm. and the other 1·5 mgm. The guinea-pig which received the smaller dose was killed three weeks later, but no lesion of any kind was found at the post-mortem examination, and no tubercle bacilli could be demonstrated in film preparations of the spleen. The second animal, which had received 3 mgm., was killed at the end of five weeks and was found to have developed a local fibro-caseous lesion, caseous inguinal and lumbar glands, and very few tubercles in the spleen, but no tuberculosis elsewhere. Beaded tubercle bacilli were present in every lesion.

Effect of 5 months' storage.—One guinea-pig was injected subcutaneously with 3 mgm. and the other with 1·5 mgm. of the same emulsion of tubercle bacilli. Three weeks later the animal which had received the smaller dose was killed, but there was no lesion of any kind at the post-mortem examination. The spleen of this guinea-pig was emulsified in saline and injected into two others, but without result. The second guinea-pig, which had received 3 mgm., was killed at the end of six weeks, but no lesion of any kind was found. The spleen of this animal was also emulsified in saline and injected into two guinea-pigs, but without result.

Summary.—In the preceding experiments we have investigated the effect of storage on a bacillus isolated from the sputum of a patient who was suffering from pulmonary tuberculosis. It reacted like the human bacillus as regards its pathogenicity for the rabbit, while at the same time it was highly pathogenic for the guinea-pig, but after 3½ months' storage the virulence of this organism for the guinea-pig was considerably reduced, while in 5 months it failed to produce any effect when inoculated *in the doses cited* into such a highly susceptible animal as the guinea-pig. Still further, the spleen of these inoculated animals was proved to be sterile. This point is of importance, as it has already been shown[3] in the case of birds which had been fed daily for periods varying from 6 to 36 weeks with human sputum that, although they did not develop any positive evidence of tuberculosis, yet, in 1 instance out of 8, the spleen of a pigeon which had been fed with sputum for 19 weeks and showed no macroscopical evidence of disease when emulsified in sterile saline and inoculated into a guinea-pig produced typical tuberculosis.

SERIES II.

In this case the tubercle bacillus was obtained from a patient suffering from pulmonary tuberculosis. The only special feature of the organism was its beaded appearance in film preparations. This bacillus was cultivated from the spleen of an infected guinea-pig on Dorset's egg medium, and when 2 mgm. were inoculated intravenously into two rabbits it set up an extreme degree of generalised tuberculosis which terminated fatally within a period of five weeks. At the same period two guinea-pigs were inoculated subcutaneously with 6 mgm. of this bacillus. One animal was killed three weeks later. There was a local abscess, large caseating inguinal and abdominal glands, and tubercles were present in the spleen and liver. The other animal, which was much wasted, was killed six weeks later and showed advanced general tuberculosis. Two guinea-pigs were injected also with 3 mgm. of the bacillus. One animal was killed three weeks later. There was a local abscess and a large caseating inguinal gland. The other animal which was killed within six weeks showed advanced general tuberculosis, with an extreme degree of infection of the liver.

Effect of 1 month's storage.—Two guinea-pigs were inoculated subcutaneously with 6 mgm. of this bacillus. One animal which was killed at the end of three weeks had developed a local fibro-caseous lesion and caseous inguinal glands, but no other lesion was discovered. The second guinea-pig was killed at the end of six weeks. This animal had a local abscess, and the inguinal and iliac glands were found to be caseous, but no tubercles were present in the spleen and liver and the animal was not much wasted.

Effect of 10 weeks' storage.—Two guinea-pigs were inoculated subcutaneously with this bacillus. One animal received 6 mgm. and the other 3 mgm. The animal which received the larger dose was killed at the end of three weeks, but there was no abscess—only a hard mass in the muscles at the seat of inoculation—no glandular enlargement, and no infection of spleen or liver. Tubercle bacilli were present in the local lesion, but *none* were found in the *spleen*. The spleen of this guinea-pig was used for inoculation purposes, as will be mentioned later. The second animal, which was killed at the end of six weeks, had developed a local abscess and tuberculosis of a limited type in the spleen and glands, and a few tubercles were present in the liver. Two guinea-pigs were inoculated with the entire splenic extract of the first animal of the preceding experiment. One pig was killed 17 days later and was found to be normal. The second animal, which was killed in 5½ weeks, showed a local abscess, caseous lumbar and iliac glands, and tubercles in the spleen, but no tubercles in the liver. Films were made from the ground-up liver tissue, but no tubercle bacilli were seen.

Effect of 3 months' and 3 weeks' storage.—One guinea-pig was inoculated subcutaneously with 3 mgm. of the bacillary emulsion and was killed at the end of five weeks. There was no local lesion, but the deep inguinal glands were enlarged and slightly caseous, and tubercle bacilli were demonstrated in the caseous tissue. The iliac glands were enlarged, but not caseous. The spleen was normal, and no other changes of any kind were detected.

Summary.—In these experiments we have been studying a bacillus isolated from human sputum which was highly pathogenic for rabbits in doses of 2 mgm. and was also equally virulent for guinea-pigs. The effect of storage was studied up to a period of 15 weeks, by which time the material was exhausted. If we compare two of the experiments which were made at the beginning of the series and at the end respectively in which guinea-pigs were inoculated with a similar dose of 3 mgm. we find advanced tuberculosis on the one hand as compared with a very limited lesion confined to tuberculosis of the inguinal and iliac glands. Such results compare favourably with the loss of pathogenicity at the end of five months' storage, which has been referred to in detail in the first series of experiments. Another point which may be discussed is the altered type of local change which is produced by the "stored" bacilli. If guinea-pigs are inoculated with bacilli which have been stored for a certain period and are examined within the first three weeks they may show only an inflammatory nodule[4] without caseation, or even no lesion whatever at the site of injection, while the animals killed in the fifth or sixth week after inoculation with the stored bacilli may show a local abscess. It would appear that the local resistance is such that for a certain time a more or less conservative process is established against the bacilli of reduced virulence, but later this is insufficient to withstand the action of the bacillus, and caseation results.

SERIES III.

In this series the culture of the tubercle bacillus was obtained from a case of pulmonary tuberculosis, and the characteristic feature of this organism was its beaded appearance. It set up rapid tuberculosis in guinea-pigs, and was recovered in pure culture on Dorset's egg medium from the spleen of the infected animals. When 2 mgm. were inoculated intravenously into two rabbits it gave rise to generalised tuberculosis and death of the animals within one month from the time of inoculation. At the same period 6 mgm. of this bacillus were injected into two guinea-pigs. One animal was killed two weeks later; it showed a local abscess, caseating inguinal and iliac glands,

[3] A Contribution to the Study of the Relationship between Avian and Human Tuberculosis, by S. G. Shattock, C. G. Seligmann, L. S. Dudgeon, and P. N. Panton, Proceedings of the Royal Society of Medicine, December, 1907.

[4] In such areas a very high degree of phagocytosis occurs, similar to the lesions found in avian tuberculosis.

and tubercles in the spleen, but none elsewhere. The second animal, which was killed six weeks later, had developed advanced general tuberculosis. Two guinea-pigs were inoculated, also subcutaneously, with 3 mgm. of the same bacillus. One animal, which was killed in three weeks, showed a local abscess, caseous inguinal and abdominal glands, and tubercles in the spleen and liver. The second animal, killed in six weeks, had developed general tuberculosis.

Effect of 4 weeks' storage.—Two guinea-pigs were inoculated subcutaneously with the stored bacillus. One animal received 6 mgm. and the other 3 mgm. The pig which had received the larger dose was killed at the end of three weeks; a local abscess, caseous iliac glands, and small tubercles in the spleen had developed. The second animal, which had received 3 mgm., was killed in 5½ weeks, and showed genera tuberculosis of a moderate type.

Effect of 2½ months' storage.—Two guinea-pigs were inoculated subcutaneously with this bacillus. The animal which received 6 mgm. was killed at the end of three weeks and showed a local area of necrosis and a local caseating gland, but the spleen was normal and there were no lesions elsewhere. The apparently normal spleen from this pig was used for inoculation into other guinea-pigs (see below). The other animal, which had received 3 mgm., was killed at the end of six weeks; a local abscess, caseous inguinal glands, tuberculosis of the spleen of a limited type, and a few small tubercles in the liver were found to be present. Two guinea-pigs were inoculated with the emulsified spleen of the first animal of this experiment. One guinea-pig, which was killed in 17 days, had developed a large local abscess showing abundant tubercle bacilli, and also caseous inguinal and lumbar glands. The spleen was normal and no tubercle bacilli were seen in film preparations of the splenic tissue. The second animal, which was killed at the end of five weeks, showed a local abscess, caseous inguinal and lumbar glands, and the spleen was enlarged and caseous.

Effect of 3½ months' storage.—Two guinea-pigs were inoculated subcutaneously with 6 mgm. of the stored bacillus. One animal was killed in 19 days. There was no local lesion, the inguinal and iliac glands showed some slight enlargement, but no caseation was detected. Film preparations made from these glands revealed the presence of tubercle bacilli. The second guinea-pig, which was killed at the end of five weeks, had developed a local abscess showing numerous tubercle bacilli, caseous inguinal and iliac glands, tuberculosis of the spleen, but no tuberculosis elsewhere.

Summary.—In these experiments bacilli stored for 3½ months were still found to be actively pathogenic, although a very distinct reduction in the extent of the lesions incited in the infected guinea-pigs was observed. This fact can be appreciated by referring to the details of the experiments as shown by the inoculation of 6 mgm. of the fresh bacillus and the bacillus which had been stored for 3½ months, when the effect of the altered virulence is at once obvious, more especially in the case of the guinea-pigs which were killed within a period of 14 to 19 days.

SERIES IV.

Treated Bacilli.

Two guinea-pigs were injected subcutaneously with the treated bacilli. One guinea-pig, which received 9 mgm., was killed two weeks later. There was a large local caseous abscess showing abundance of tubercle bacilli, caseous inguinal and iliac glands, and a very large caseous spleen. The other animal, which received 1·85 mgm., was killed at the end of one month. There was a large local abscess containing numerous tubercle bacilli and advanced general tuberculosis.

Effect of 3 months' storage.—Two guinea-pigs were inoculated with 9 mgm. of the same treated bacillus. The first animal, which had been injected intraperitoneally, was killed two weeks later, but no macroscopic changes were detected. The omentum appeared to be quite normal, but when examined microscopically patches of fibrous tissue, including numerous endothelial cells and small giant cells, were found. There was no caseation, but tubercle bacilli were present in large numbers and almost entirely intracellular. The other guinea-pig died at the end of one month. There were a local lesion with numerous tubercle bacilli, early tuberculosis of the spleen, and caseous inguinal glands. Two guinea-pigs were inoculated with 3·7 mgm. of the same treated bacillus. The first animal, which had been injected intraperitoneally, was killed two weeks later, but no change was detected. The omentum taken for microscopy, however, showed fibrosed cellular patches containing both small and large giant cells, but no caseation. Bacilli were numerous, but almost entirely within the giant cells. The second guinea-pig, which had been inoculated subcutaneously, was killed at the end of one month. There were a local abscess showing tubercle bacilli, caseous inguinal and lumbar glands, and limited tuberculosis of the spleen. One guinea-pig was inoculated with 9 mgm. of the same treated bacillus subcutaneously, and was killed two weeks later. The post-mortem examination revealed encapsulated nodules in the muscles of the leg, but no glandular enlargement, and no other lesion was detected. A film of the muscle lesion showed massesof tubercle bacilli inside giant cells and endothelial cells.

Effect of 4½ months' storage.—One guinea-pig received 1·5 mgm. subcutaneously, but no lesion of any kind was detected 14 days later, while another pig, which had been injected subcutaneously with 3 mgm., when killed at the end of one month was found to have a local abscess, caseous inguinal and lumbar glands, and some small tubercles in the spleen, but none elsewhere.

Effect of 5½ months' storage.—One guinea-pig was inoculated with 1·5 mgm. of the stored bacillus, and was killed seven weeks later. It was not wasted. There were a local fibro-caseous abscess, caseous inguinal and lumbar glands, and some large tubercles in the spleen and a few small tubercles in the liver. The spleen and local lesions obtained from this guinea-pig were inoculated separately into four guinea-pigs; in each case rapid and generalised tuberculosis was produced.

Summary.—It may be stated at the outset that treating the bacillus with immune tuberculous serum had no effect on its pathogenicity, while storage cannot be said to have reduced the virulence to the same extent as occurred with the other cultures of the tubercle bacillus employed. The difference, however, between general tuberculosis such as occurs with recently cultivated bacilli and that which is induced by means of stored bacilli has only to be seen to be appreciated. Further, it has been shown that bacilli present in a local lesion and in the spleen of a guinea-pig which had been inoculated with bacilli stored for five and a half months were capable of inducing fully active tuberculosis if planted in fresh animal soil.

Attention also must be drawn to the limited tuberculosis of the peritoneum in guinea-pigs inoculated with such samples of stored bacilli. In fact, the contents of the peritoneal cavity appeared to be normal, but microscopical examination of the omentum revealed a condition almost akin to leprosy. These observations agree with those of Stanley Griffith[5] recently published on the strains of tubercle bacilli isolated from cases of human lupus. In this valuable contribution to the study of tuberculosis the author's own words may be quoted: "Cultures were obtained from no fewer than ten guinea-pigs without macroscopic lesions of tuberculosis. ..... The absence of macroscopic tuberculosis in a guinea-pig inoculated with lupus material and examined within five weeks does not therefore necessarily signify that there were no tubercle bacilli in the material inoculated." The observations made by Griffith on the effect of inoculating guinea-pigs with certain samples of lupus material agree with the experiments recorded here on the effect of intraperitoneal inoculation of guinea-pigs with a certain strain of stored tubercle bacilli.

SERIES V.

Bovine Tubercle Bacillus.

This bacillus, which was supplied to me through the kindness of Professor S. Delépine, was cultivated for three weeks on egg medium, and when inoculated into rabbits and guinea-pigs gave rise to rapidly fatal tuberculosis in doses of 1 mgm. and 0·5 mgm.

Effect of 7 months' storage.—Two guinea-pigs were inoculated with 1 mgm. and 0·5 mgm. respectively of the bacillus which had been stored in saline. Neither pig showed any evidence of tuberculosis at the end of six weeks, and no tubercle bacilli were detected in anti-formanised residues of the respective spleens.

[5] Further Investigations on the Strains of Tubercle Bacilli Isolated from Cases of Lupus, by A. Stanley Griffith, Journal of Pathology and Bacteriology, vol. xviii., No. 4, April, 1914.

Effect of 8 months' storage.—Two guinea-pigs received subcutaneously 57 mgm. of the stored bovine bacillus, but without result at the end of six weeks, and the spleens of these guinea-pigs when inoculated into further guinea-pigs failed to excite tuberculosis.

Summary.—In this experiment we have the full effect of storage on the bovine tubercle bacillus. An actively virulent bovine bacillus was rendered non-virulent as far as the guinea-pig tests serve to show by this means, and further, such an enormous dose as 57 mgm. failed to incite any macroscopical lesion, and, moreover, the spleens of these animals were shown to be sterile.

Film preparations of the various samples of the tubercle bacillus were made before inoculation of the animals, so that any question as to whether the inoculated material contained bacilli need not be considered.

These results are of sufficient interest to record even at this stage of the investigations, but a large amount of work will have to be done to show the periods at which such alterations of pathogenicity occur. It is well known that when bacteria are kept in an unsuitable medium they may lose their virulence, but the interest in these experiments rests in the gradual reduction of the pathogenicity of the bacillus stored in normal saline and also because these observations are based on the effect of the inoculation of known quantities of the bacillus at various intervals.

It must be mentioned, however, that all my experiments refer entirely to the alteration of the pathogenicity of the tubercle bacillus for such a susceptible animal as the guinea-pig, and no attempt has been made to study the rate of growth of the stored bacillus on artificial media, but cultivations were made from the infected tissues of the guinea-pigs on numerous occasions and compared with the originals. No attempts were made, however, to subcultivate the stored bacillus direct from the saline-bacillary mixture, as such observations are associated with certain fallacies which do not exist in experiments on pathogenicity, and after all this is the most important characteristic of a micro-organism.

OBSERVATIONS ON 120 CASES OF LEAD ABSORPTION FROM DRINKING-WATER.

BY W. W. STAINTHORPE, M.D., B.S. DURH.

THE occurrence of plumbism, due to a contaminated water-supply affecting a considerable number of the consumers, is so rare in the present day that I feel that a detailed report of some of those cases that came under my observation during a recent epidemic at Guisborough will be of interest to the medical profession.

The outbreak was the subject of a Local Government Board inquiry last autumn and was clearly traceable to the water-supply, which at intervals had been found to contain lead in solution, due to the fact that the water supplied to the houses in the town passed through lead service pipes, and that the water itself had at times a distinctly plumbo-solvent action, especially after heavy rains. Plumbism from this cause differs largely from that arising in lead factories because of the small amount of the poison taken into the system in a given time, and as the poison is a cumulative one some time may elapse before the onset of any symptoms, however slight, which may afford assistance towards the elucidation of the actual causation; also severe intoxication may have taken place prior to any symptoms pointing to plumbism having made themselves manifest, by which time grave structural changes may have occurred in the kidney, liver, or nervous tissues, leading to premature old age or to a fatal termination from Bright's disease, cirrhosis, paralysis, &c. I attended a large number of patients suffering from the intoxication and I had the misfortune to contract the disease myself. The following observations are, however, confined to 120 serious and typical cases, about each of which I made careful notes. The age and sex of these patients and the number affected at the different age-periods are set forth in the following table, together with the number of fatal cases:—

Ages.	Male.	Female.	Total.	Died.
Birth—6 weeks	1	2	3	0
1 year—20 years...	3	4	7	1
20 years—30 ,, ...	8	15	23	0
30 ,, —40 ,, ...	19	26	45	1
40 ,, —50 ,, ...	10	10	20	1
50 ,, —60 ,, ...	6	8	14	0
60 ,, —70 ,, ...	3	5	8	1
Totals	50	70	120	4

In this series of cases all stages of the intoxication were seen, from the commencing general languor and debility, attended by anæmia, to the paralytic stage, ending in convulsions and death. Amongst the number are three infants under the age of six weeks who from birth had been nourished solely upon the breast. Lead was found in the mother's milk in each instance, and in the urine in two instances. Children are supposed to be ready victims to the disease, and I am at a loss, therefore, to account for the small number affected. That some persons are more susceptible to the poison than others is clearly shown in the case of two individuals who developed symptoms after only six weeks' residence in the locality.

As will be seen by the above table, 4 deaths occurred directly traceable to lead intoxication, 1 from convulsions and 3 from chronic Bright's disease accompanied by cirrhosis of the liver. A chemical examination of the liver, kidneys, and spleen from one of these cases showed the presence of lead, the largest amount being found in the spleen. The signs and symptoms of the disease were very varied, and may best be described separately under the following headings. The figures show the number affected by particular symptoms:—

Premonitory symptoms	120	Menstrual disorders ...	55
Abdominal	102	Abortions	5
Headache	91	Blue line on gums ...	15
Anæmia	98	Constipation	40
Nervous and muscular disorders	89	Convulsions	2
		Albuminuria	20

Premonitory Symptoms.

Careful inquiry into the previous history of these cases of plumbism revealed that they had all passed through a period of ill-defined indisposition, in some cases of a few weeks' duration, in others for a longer time, during which their subjective feelings were so indefinite and irregular as hardly to merit much notice being taken of them by the patients themselves. The following symptoms were usually observed: General lassitude; weariness; languor; tiredness, at first after slight exertion, afterwards even after sleep; restlessness of mind and body; incapacity for work; occasional fits of mental depression; irritability of temper; alteration of disposition; desire to sleep at any moment, sleep being heavy, fitful, and unrefreshing; and sudden craving for food, especially soon after meals (in a few cases), although usually loss of appetite, nausea, and anorexia, accompanied by a peculiar, sour, rancid, clammy taste in the mouth in the early morning, prevailed.

Abdominal Symptoms.

These symptoms were grouped under the following five varieties: (1) Abdominal distension; (2) abdominal heaviness; (3) burning sensation in the epigastrium; (4) gnawing sensation; and (5) colic. Each variety was distinct and independent of the other; they were rarely associated together, and eventually, after becoming more constant and severe in intensity, culminated in definite attacks of colic.

1. *Abdominal distension.*—During meals the patient suddenly experienced a sensation of fulness and distension all over the abdomen, together with nausea and desire to eructate, lasting from a few minutes to several hours, and passing off quickly with possibly no recurrence for several days.

2. *Abdominal heaviness.*—In this variety a cold, weighty feeling was experienced in the lower abdomen, setting in soon after meals, causing a "bearing down" sensation and a desire to pass urine and flatus, both of which gave temporary relief.

3. *Burning sensation in the epigastrium.*—This symptom commenced as a raw burning sensation at the back of the throat, particularly in the early morning after drinking fluids, passing down behind the sternum, where it was frequently very acute, to the epigastrium, and through to the back between the shoulder blades; at times the diaphragm felt raw and tender, so that deep inspiration and coughing became painful. Loss of appetite, nausea, anorexia, with a sour clammy taste in the mouth, were usually present, as well as a desire to vomit and retch, which frequently resulted in the vomiting of glairy mucus having a very bitter, sour taste; rarely did the vomit contain food previously taken.

4. *Gnawing sensation.*—This commenced as a vague uncomfortable feeling all over the abdomen, occurring at irregular intervals, and frequently associated with general weariness and languor, seldom of sufficient severity for the patient to seek medical advice until the symptom became merged into a dragging, gnawing sensation, which usually became localised to the epigastrium or hypogastrium as the severity increased; it was usually likened to a tearing sensation, as if the bowels were being torn out or grasped by an unseen hand. This symptom was always worst from two to three hours after meals, and was accompanied by an intense craving for food or drink, which usually afforded instant relief for the time being. Exercise and exertion considerably aggravated the condition. A constant desire to pass flatus, to eructate, and to micturate attended this symptom, the least effort to do so being usually strained and very painful.

5. *Colic.*—The preceding symptom was the most frequent forerunner to definite attacks of acute colicky pain in the abdomen, which varied in character from a sharp stabbing, cutting pain to one of an acute twisting variety, as if the bowels were being nipped. The attacks usually came on quite suddenly and with such severity that the patient would roll about in considerable agony; the duration varied from a few minutes to several hours. The point of maximum intensity usually altered at each attack, the most frequent localities being around the umbilicus, the left iliac region, immediately above the pubes, and to the right of the epigastrium. During the attack the patient would break out into a cold, clammy perspiration, and present an anxious appearance, the temperature being usually subnormal and the pulse-rate slightly increased; a few cases only were observed in which the pulse-rate was under normal. When the pain was distinctly unilateral the pupil of the eye of the affected side was frequently noted to be contracted when compared with its fellow, and marked vagal tenderness upon the same side of the body was usually observed. The colic was often accompanied by vomiting, the vomit being bilious and containing a quantity of mucus. A constant desire to micturate, resulting in the voiding of a small quantity of urine, attended by considerable pain, was always present during an attack of colic. After the passing of the spasm the patient would fall into a sound sleep, and upon awaking the abdomen would be very tender to the touch, the pulse-rate usually above 100 per minute, and the temperature averaging 99° to 100° F.

Headache.

This was a frequent and troublesome symptom and in many instances the first and only subjective one for a considerable time. It was always attended by a sensation of lassitude, languor, and fatigue in the early stage; later general restlessness, irritability of temper, partial temporary loss of memory, attacks of dizziness occurring quite suddenly, slight dimness of vision, periods of insomnia, and hallucinations of sight and hearing were noticed. The pain usually remained localised to one of the following regions—viz., occipital, frontal, temporal, or vertex, and frequently depended in character upon its situation. The occipital variety was most intense over the occipital protuberance, radiating down into the muscles of the neck, and was of a dull aching character, often so intense as completely to invalid the sufferer. The frontal variety commenced as a slight feeling of heaviness behind the eyes, followed later by a sensation of constriction over the forehead. The temporal variety was more throbbing in character, usually accompanied by sharp, shooting, darting paroxysms, as if some instrument were being forced through the head from one side to the other. The vertex variety commenced with a feeling of heaviness, as if some heavy weight were resting upon the head, followed later by a "bursting open" sensation. The headache was usually very severe in the mornings, improving as the day went on, only to recur with a maximum intensity during the evening, vomiting frequently being present at the same time.

Anæmia.

This condition varied from a slight pallor of the conjunctiva and mucous membrane of the mouth—usually attended by a yellowish appearance of the conjunctiva and of the skin of the face—to an intense anæmia suggestive of malignancy. In the early stage microscopic examination of the blood did not show any marked change; in the later stages the erythrocytes were considerably diminished in number, and there was a corresponding diminution in the amount of hæmoglobin. Poikilocytosis was rarely seen, and in some instances there was a diminution in the polymorphonuclears and an increase in the lymphocytes. Thirty cases were carefully examined for the presence of basophile-staining granules in the red cells, with negative result. Sir Thomas Oliver was unable to find these cells in blood films taken from 10 of the cases presenting symptoms of all stages of lead intoxication. Dr. Kenneth W. Goadby, who also very kindly examined films from four of the patients, wrote me saying that he was unable to detect their presence. These observations tend to prove that basophilia as a sign of plumbism cannot be relied upon.

Nervous and Muscular Disorders.

While symptoms indicative of irritation of the nerve and muscle tissue were present in many of the cases only a few showed symptoms indicative of destruction of these tissues. The disorders of tactile sensibility were usually described by the patient as numbness and tingling, or "pins and needles" in the fingers and toes. The vaso-motor disorders consisted of cold hands and feet, and sometimes of hot, burning sensations in the extremities, especially after getting up in the early morning. At times the skin of the fingers and toes became quite white, or warm, livid, and moist. Profuse perspiration upon slight exertion was often noticed by the patient.

Muscular spasms.—These were often noticed, either in the form of tremors and twitchings of the extremities, or active cramps, most severe and persistent in the calves of the legs. These cramps were usually worst at night, preventing sleep, or in the early morning.

Sensory disorders.—These consisted of aching, burning, twisting or shooting pains in the limbs, with occasional paroxysms of excruciating lancinating pains, principally in the legs and feet. At one time the darting pains would be in the fingers, at another in the arms, at another in the legs; in other cases, again, the sensory branches of the intercostal nerves were implicated. In some cases the superficially situated nerve trunks, such as the ulnar, the musculo-spiral, or the popliteal nerves were unduly sensitive. A few cases showed slight cutaneous anæsthesia. In one patient who had complete ankle-drop and partial wrist-drop of both hands the anæsthesia was complete in the lower limbs as high as the knees, and in the upper limbs as high as the elbows. Muscular hyperæsthesia was frequently localised to the muscles of the legs.

Motor disorders.—Impairment of the muscular power of the muscles of the upper limbs was frequently noticed, the

finer movements of the fingers and thumb being feebly performed, followed later by distinct weakness of the extensors of the wrist, patients often complaining that the grasping power had considerably diminished, and that they were afraid to carry any breakable object in case it suddenly fell from their hands. Two cases presented complete paralysis of the extensor muscles of the wrist and fingers of the right hand; in each case the paralysis became complete within three weeks of the patient first complaining of any symptom of plumbism. Although many suffered from weakness of the muscles of the legs, associated with exaggeration of the knee-jerk and of the plantar reflex, only one case of ankle-drop came under observation. Impairment of the muscles of the face was frequently noticed, as shown (1) by tremor of the lips, or on protrusion of the tongue; (2) by loss of expression, the lines which give character to the face being less marked or even obliterated. Two patients suffered from ptosis, one from nystagmus, and two from partial incontinence of urine and fæces.

Menstrual Disorders.

Dysmenorrhœa was very pronounced in many cases, frequently lasting a week, accompanied by a scanty flow. Other patients had intervals of amenorrhœa for several months, then one or two normal periods. The majority of the female patients suffered from profuse menorrhagia lasting in some instances for a period of three weeks.

Abortions.

Careful investigation failed to reveal an excessive number. In this series there were only five patients in whose urine lead had been found to be present who had suffered from abortions, one of whom had previously aborted three times in five years, another twice in three years.

Blue Line on Gums.

This sign depends largely upon the care devoted to the toilet of the mouth. Only two out of the 15 patients seen presenting a blue line were in the habit of brushing their teeth daily. The intensity of the sign bears no relationship to the severity of the symptoms. I have seen it very pronounced in persons suffering from quite trivial symptoms of plumbism, and I have even known of its existence previous to symptoms appearing. As only 15 patients in this series of 120 showed a blue line upon the gums, the absence of such sign is of little diagnostic value.

Constipation.

Although not a constant feature, many complained that their usual evacuation of the bowels was attended by more than the usual effort, and that they frequently had recourse to aperients. Those who suffered from costiveness in a marked degree frequently had attacks of spasmodic diarrhœa followed by obstinate constipation. Many cases were observed in which acute attacks of colic occurred after the exhibition of aperients amongst patients who had not previously suffered from abdominal trouble.

Convulsions.

Two cases of convulsions came under my notice, the patients being 65 and 18 years of age respectively. The former had 20 convulsive seizures extending over a period of 18 months; the latter six attacks in four months. They occurred quite suddenly without any previous warning, usually whilst the patient was walking about. Complete loss of consciousness was quickly followed by spasmodic twitching of the muscles of the face and limbs, usually unilateral. Respiration was at first quiet and sighing, later loud and stertorous, and at times intermittent; as the convulsive spasm passed off the breathing resumed the slow, shallow, sighing type. The pulse, which at the onset was fast and bounding, quickly became slow, intermittent, and at times hardly perceptible. The pupils of the eyes were usually dilated, fixed, and frequently unequal. Incontinence of the bladder and rectum usually took place during the attack. After the convulsion the patient would fall into a heavy sleep lasting several hours.

Albuminuria.

This sign was present in 20 cases, varying in amount from a mean trace up to 4 grammes per litre, estimated by Esbach's method.

The recognition of plumbism resulting from the absorption of lead gaining access into the system from the drinking of water which at times possesses plumbo-active properties may be one of considerable difficulty for the following reasons. 1. The amount of lead present in the water drawn from the household tap is usually small. 2. The poison being a cumulative one will necessarily cause the onset of symptoms to be slow and insidious. 3. Many of the symptoms of plumbism, especially in the early stages, are prone to simulate other diseases. 4. The absence of any conclusive sign or symptom, whereby incipient cases can be correctly diagnosed, excepting by the more or less costly clinical analysis of the urine or fæces. 5. Individuals suffering from plumbism do not necessarily excrete lead in the urine or fæces regularly. 6. The symptoms may continue for a long time after any lead can be detected in the excreta.

In each instance in the above series of 120 cases I based my diagnosis upon the presence of lead in the urine after submitting the urine to the following clinical examination.

100 c.c. urine and 10 c.c. pure redistilled nitric acid are evaporated in a porcelain basin to dryness; then ignited over a Bunsen burner until all organic matter is completely destroyed. The residue is dissolved in distilled water 3 c.c. + 2 c.c. HCl dil. pure, filtered into a test-tube, and an equal bulk of sulphuretted hydrogen is added. If no lead is present no change in colour will occur, and in its presence a brown colouration will be seen, varying in depth according to its amount.

Control examinations of 30 of the above cases were made for me by Messrs. Brady and Martin, of Newcastle-on-Tyne, confirming my results. The following two tests are worthy of note.

1. Paint the palm of the hand with a fresh solution of ammonium sulphide; in many cases the skin becomes black from the conversion of the lead excreted by the skin into lead sulphide, best seen upon the thenar eminence.

2. The saliva of a patient suffering from acute lead colic rarely contains any potassium sulphocyanate. On the addition of a few drops of liquor ferri perchloridi to the saliva of a healthy person a brownish-red ring appears where the two fluids meet. This is absent in the saliva in lead colic, but the sulphocyanate returns on the subsidence of the abdominal pain.

Guisborough.

LONDON HOSPITAL.—At an informal gathering of students in the college library on July 13th the prizes and certificates gained during the past session were distributed by Mr. E. Hurry Fenwick, consulting surgeon to the hospital. Price entrance scholarship in science, £100, C. S. Cloake. Price entrance scholarship in anatomy and physiology, £52 10*s.*, L. G. Jacob. Entrance scholarship in science, £50, G. Adler. Anatomy and physiology prize, £25, G. P. B. Huddy and A. G. Harsant (equal, prize divided). Letheby prizes: Organic chemistry, £10, G. Adler; honorary certificates, R. Theron and C. S. Cloake; inorganic chemistry, £15, M. Aronsohn; honorary certificates, — Seniyzky, I. H. Zortman, K. C. Beatty, and A. Eidinow. Prize in clinical medicine, £20, A. C. Perry; honorary certificates, F. H. Bray and C. P. Allingham. Prize in clinical surgery, £20, S. Batchelor. Prize in clinical obstetrics, £20, L. M. Ingle; honorary certificates, F. H. Bray and A. C. Perry. Hutchinson prize, £40, W. S. Perrin. Sutton prize in pathology, £20, F. H. Bray; honorary certificate, E. E. Herga. Andrew Clark prize, £26, A. C. Perry; honorary certificates, R. J. M. Love and E. E. Herga. Anderson prizes (three at £3), £9, E. Forrester Paton, G. P. B. Huddy, and D. C. Norris; honorary certificates, R. K. Ford and K. M. Ross. Dressers' prizes, £40: in-patients (four at £5), R. G. Sterling, H. W. Taylor, A. H. Morley, and H. W. L. Molesworth; out-patients (four at £5), E. B. Woolf, S. H. de G. Pritchard, H. P. Warren, and S. C. Woodhouse; honorary certificates, H. H. Bailey and D. F. Wilson. Practical anatomy prizes, £10, J. J. Murphy (£4), G. Adler (£2), G. Gluckman (£2), and H. B. Troup (£2). Douro Hoare prize, £5, H. H. Bailey; honorary certificates, F. G. L. Dawson and A. R. Crane. Wynne Baxter prize, £5 5*s.*, E. E. Herga, J. Fanstone.

FURTHER NOTE ON THE USE OF CELLULOID SPLINTS IN THE TREATMENT OF ACUTE CASES OF POLIOMYELITIS.[1]

BY FREDERICK E. BATTEN, M.D. CANTAB., F.R.C.P. LOND.,

PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, AND TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

SOME three years have passed since I first made use of celluloid splints (which had been introduced into this country by Mr. H. J. Gauvain in the treatment of tuberculous disease of bones and joints) for the treatment of acute cases of poliomyelitis. Two years have elapsed since the publication of a note on this subject in THE LANCET, and it seems well to review the work of these two years. During this period ample opportunity has been afforded for testing the use and watching the effect of this mode of treatment.

From January, 1912, to December, 1913—i.e., two years—58 cases of poliomyelitis were admitted to the wards under my care. Of these, 32 were admitted within three months of the onset, and it is with these 32 cases that I wish to deal, for it is the early application of celluloid splints I consider important. Of these 32 cases 24 were splinted; the remaining 8 were either too extensively affected (both legs, arms, and trunk), or were cases of arm paralysis only, or had a distribution of paralysis which needed no splint or recovered so quickly that no splint was needed. Of the 24 splinted cases, in 3 recovery is now so far complete that no splint is needed. In the remainder splints are still required, but all are able to get about, either alone or with the aid of a push-cart. In several cases in which splints were at first required on both legs they now only require a single one below the knee to prevent foot-drop. In not one of all the cases recently seen or heard from has deformity arisen, but 3 have not been seen recently.

The more I see of this method the more convinced I am that it is a good one. I am perfectly aware that there is nothing new in splinting acute cases of poliomyelitis; it has been done in a variety of methods by various medical men for years. Some have advocated immobilisation in plaster-of-Paris, others have insisted on the immobilisation of the limb with complete relaxation of the paralysed muscles. All such immobilisation of the limb immobilises the patient, which in many cases is not only unnecessary, but gives no chance for physiological exercise of the muscles which are not paralysed. It is in the really acute cases—i.e., those seen within three months of the onset of the disease—that these splints have been of the greatest service, for they have kept the muscles at rest in a position of relaxation; they have prevented deformity and have enabled the patient to walk at an earlier period than would otherwise have been possible. The advantages of this form of splint are: (1) it fits the limb perfectly; (2) it is easily applied and removed; (3) it is light; (4) it is rigid; (5) it will not break easily; (6) any form of slipper, shoe, boot, or clog can be worn over it; (7) it is cheap; and (8) its manufacture is so simple that any one gifted with a little manual dexterity can make it. Many of the splints have been made by the sister in my ward and by my former house physicians, Dr. Cairns Terry and Dr. John Inkster, to all of whom I would tender my thanks not only for their work, but also for many improvements suggested by them. The splints are now made in separate departments of the hospitals. The process involved in making them is as follows: (1) the taking of the "negative" cast of the limb; (2) the making of the "positive"; and (3) the moulding of the splint on to the positive. It is the first of these points of procedure which it is essential for the medical man to perform, for unless the limb is in the right position the splint will be useless.

1. Certain articles are necessary for taking the cast of the limb—a strip of lead, 2–3 ft. long and 1 in. wide, some oil, some beeswax, a strong knife with a sharp point, and some plaster-of-Paris bandages. It is essential that the bandages should be properly made of book muslin, 4½ in. wide, 6 ft. long, loosely wound, and not too heavily loaded with plaster. The limb of which the cast is required is oiled, and if it be the leg a thin layer of beeswax is placed over the malleoli. The strip of lead is adjusted to the front of the leg. The leg is now held in position; *this is the most important detail in the whole process.* There should always be slight flexion at the knee-joint, and the foot should be carefully held at right angles to the tibia. It is most important that there should be no hyperextension of the knee or any dorsiflexion of the foot. Unless these two points are carefully attended to the patient will not only be uncomfortable, but will be unable to walk. The plaster-of-Paris bandages are now placed in warm water and after being squeezed out are wound round the limb, starting from the foot and working up the leg and thigh. It is best to take each bandage continuously up from the foot to the thigh, a few extra turns being needed over the knee and ankle. When the plaster has sufficiently set, which usually takes about 3–5 minutes after the last bandage has been applied, a cut is made down the anterior surface on to the lead. The incision must be complete and all fine threads divided, as otherwise the cast is liable to be spoilt by portions of the bandage being dragged out of place. The cut edges of the plaster are now separated and the lead and leg removed through the incision. The cut edges of the plaster are now brought together and a single layer of plaster-of-Paris bandage wound round the cast.

2. The "positive" cast is easily made from the "negative" in the ordinary manner by pouring in plaster-of-Paris, a stick being placed down the centre in order to make it easy to manipulate. After the plaster has firmly set, an incision is made down the anterior surface, the negative peeled off, and the positive removed.

3. *The moulding of the splint on the "positive."*—For making the splint the following articles are required: stockinette (made in the form of a tube, two or more inches wide), book muslin, solution of celluloid in acetone (Gauvain's[2] solution is as follows—11 oz. of celluloid, 160 oz. of acetone, to which is added while still hot 3 oz. of calcium chloride dissolved in 2 oz. of boiling water), celluloid varnish (cellulose triacetate 1 part, acetone 5 parts)—some braid for binding the splints, and some boot-hooks. The "positive" is well dusted with French chalk.

Method.—Three layers of stockinette are pulled on over the cast and on the third layer is painted a coat of the solution of celluloid; this is allowed to dry and then another layer of stockinette is pulled on; this in turn is painted with the solution of

[1] The previous article on this subject was published in THE LANCET of July 13th, 1912, p. 80.

[2] Brit. Med. Jour., 1913, vol. i., p. 1210.

celluloid. In order, however, not to get the splint too thick on its anterior surface where it has to open to allow the leg being placed inside, and in order to make the splint sufficiently rigid to stand the weight of the body, layers of book muslin are placed down the back of the splint and painted on. It must be so arranged that in the anterior part of the splint there are some 5–6 layers, whilst at the back and sides there are 12–14 or more, depending on the size of the limb and the required strength of the splint. After the final layer of stockinette and celluloid solution has been applied a layer of celluloid varnish is painted on and the splint allowed to dry. Two incisions of about a quarter to half an inch apart are now made down the front of the splint and a strip about half an inch in breadth is removed. This allows the "positive" on which the splint has been made to be taken out and the inner layer of stockinette, which has not become impregnated with solution, is removed. The inner surface of the splint is now painted with the celluloid solution. The splint is now ready for fitting on to the patient. If the cast has been well made it usually fits perfectly, and only some small amount may need to be cut away about the knee and ankle so as to allow easy application and removal. The splint is now bound round with leather or braid, the latter being painted over with celluloid varnish and some boot hooks inserted.

Method of application and use.—It is necessary to say a few words about the application, for unless this splint is rightly applied it will be uncomfortable, will cause pressure sores, and will therefore be said to be useless. The skin of the limb is dusted with powder and a thin stocking or stockinette put on. The splint is now opened in

FIG. 1.

Child with flaccid paralysis of both legs and weakness of the muscles of the back in celluloid splints in walking apparatus.

front and the limb dropped into place. It is essential to see that the heel is down and the malleoli are in their right situation. In early and acute cases—i.e., in cases within the first four weeks of onset—the splint should be worn day and night and only removed for washing and for such methods of treatment as may be considered desirable. After the end of the first month it is usually possible for the patient gradually to get into the erect position and make the early attempts to walk. (This is greatly assisted by a walking apparatus (Fig. 1). For this purpose a stocking is drawn over the splint and an ordinary shoe, rubber sand shoe, or boot worn. In the country children can wear clogs, and these serve the purpose of protecting the splint and keeping the feet dry. If clogs are used a fairly thick stocking should be worn between the clog and the splint.

Cases suitable for splinting.—Almost any case of paralysis of the lower limbs is suitable for this

FIG. 2.

Child with flaccid paralysis of deltoid, biceps, and muscles of the right arm. The arm is placed in a celluloid splint, which keeps it in an abducted and flexed position.

form of splinting, but those with weakness of the lower dorsal, lumbar, and pelvic muscles are difficult to deal with. In cases of paralysis of the shoulder muscles the arm can be placed in the position shown in Fig. 2, which serves to keep the deltoid and biceps relaxed. Thoracic and abdominal cases can be splinted in this manner, but it has little advantage over other methods of giving support to the back and trunk muscles.

Conclusions.—The object of this note is to show that early splinting of cases of acute poliomyelitis with celluloid splints is attended with good results, in that it has aided the recovery of the paralysed muscles by keeping them at rest, that it has prevented deformity, and has enabled the patient to walk.

Of the 24 cases of acute poliomyelitis seen and treated within three months of the onset, in 21 it is known that no malposition has arisen; three cases have not been seen recently, so no positive statement can be made in regard to them. In one severe case, after wearing splints for a year, recovery was so far complete that splints were no longer required, and a year later it was difficult to say that there was any residual paralysis. It is fully recognised that this is fortuitous, and under other forms of treatment the boy might have made an equally good recovery, but it seems certain that his recovery was greatly assisted by the prevention of deformity in the early stage of the disease. Of the remaining cases, all have still varying degrees of weakness, but are all able to get about and have no malposition of the limb.

EPIDEMIC CATARRHAL JAUNDICE.

BY E. A. COCKAYNE, M.D. OXON., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE MIDDLESEX HOSPITAL; PHYSICIAN TO OUT-PATIENTS, VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

IN September, 1913, after seeing no cases of catarrhal jaundice since the early spring, I began to meet with them amongst my out-patients, and they were fairly numerous until the middle of March, 1914, but for the last three months I have seen none. By making inquiries about the possibility of contact with other cases I found that in two instances they had occurred in connexion with definite epidemics.

In 1912 I published a paper on this subject in the *Quarterly Journal of Medicine* in which I tried to prove that catarrhal jaundice should be classed with measles and mumps as one of the specific infectious diseases due to an unknown organism, and that it should be regarded as an infective hepatitis. I am convinced more than ever that this is a correct view, and have been supported by Dr. Leonard Guthrie in a paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine. I will not repeat all the arguments there brought forward, but will content myself by giving a few of the most striking.

The disease has an almost worldwide distribution, a definite seasonal and age incidence, and is commoner in some seasons than others. The fact that one attack confers immunity for life also points to its specific nature. Fewer than 40 epidemics have been described in this country, but when the view that the disease is not an incident in a non-specific gastro-enteritis is less widely held, small epidemics will probably be found to be fairly common, and small groups of two or three cases will be noticed still more frequently. I pointed out that though the clinical features of sporadic cases vary to some extent, none are met with which are not also seen in the epidemics and *vice versa;* the ages and seasonal incidence show a very close parallel, and the geographical distribution of epidemics closely follows that of sporadic catarrhal jaundice, though it is not quite so extensive. No doubt the gaps will soon be filled when greater interest is aroused; for instance, though the sporadic form is met with, no epidemics have been recorded from Canada, but Dr. C. H. Reason told me a few months ago that he met with one affecting about 20 children near Toronto.

It is still an open question whether the disease is a local one of the bile-ducts and liver or a general blood infection. With growing knowledge many diseases formerly regarded amongst the former class are now placed in the latter, and several considerations suggest that this should be one of them. Such are the prodromal period of malaise with pains in the head and limbs, the enlargement of the spleen, and the albuminuria, which are frequent in some epidemics, and also occur in isolated cases. The rare fatal cases met with in epidemics are inseparable on clinical and pathological grounds from acute yellow atrophy of the liver, and the seasonal incidence of this disease appears to be the same. It is noteworthy that three cases have occurred in London at the end of 1913 and the beginning of 1914, during the time catarrhal jaundice has been unusually common, one in a child recorded by Dr. J. Porter Parkinson, and two in adults by Dr. W. Brander and Mr. G. L. Keynes.

Recently collected evidence seems to prove that the disease is contracted by breathing in air containing the organism, and close contact is necessary. In a few cases I have noticed a definite pharyngitis, and I published some instances in 1912. In 1913 I met with another example in a girl aged 5½ years. She had pharyngitis and slight malaise on Nov. 4th, and on the 15th urticaria began, such that the mother said "she could not bear herself." On the 18th she vomited twice, and jaundice appeared on the 19th and lasted until the 26th. Sore-throat with marked redness of the pharynx was noticed in one of the epidemic cases (Table II., Case 4). Ralph Poignard noticed slight pharyngitis in every case in a small epidemic in children between the ages of 6 and 12 years. Dr. Cameron Gibson, who has recently published a paper, noticed sore-throat with symptoms of a "cold" in one case, and says that there were an unusual number of cases of pharyngitis in children during epidemics of jaundice at Lymm and Bickerton. This suggests that the tonsils and pharynx are the portals of entry of the infecting organisms, as in so many specific fevers, though they do not necessarily cause a recognisable inflammation of the tissues during their passage.

Several interesting points are brought out in the two epidemics which I have just seen. The first occurred at the Algernon-road School, Hendon. In this 10 children were attacked, 4 boys and 6 girls. The first case occurred in one of the older children; all the rest in the children attending the infants' department. Boys and girls are taught together, but the buildings for the older children and infants are in separate blocks at opposite ends of the playground.

The district is a somewhat isolated one and the children attending the school have clean and comfortable homes. West Hendon is supplied by two water companies, the Colne Valley and the West Middlesex, and about half the children affected come from houses supplied by the one and about half from those supplied by the other. Nor did the children have milk from a common source. Water is supplied at the school, but while the epidemic was in progress the weather was cold and

TABLE I.—*Giving Particulars of 10 Cases of Catarrhal Jaundice occurring in the Algernon-road School, Hendon.*

No.	Sex and age.	Date of absence from school.	No.	Sex and age.	Date of absence from school.
1	F., 9	Dec. 1 to Dec. 25.	6	M., 5	Jan. 7 to Jan. 19.
2	F., 6	,, 11 ,, Jan. 7.	7	F., 6	,, 9 ,, ,, 19.
3	M., 5	,, 17 ,, ,, 7.	8	M., 5	,, 16
4	F., 6	,, 31 ,, ,, 19.	9	M., 6	Feb. 11 ,, Feb. 27.
5	F., 6	Jan. 7 ,, ,, 19.	10	F., 7	Mar. 2 ,, Mar. 31.

most of the children live very near the school, so that little water was being drunk. Inquiry also showed that some of the affected children had not been using it at all. This disposes of the possibility that water or milk could have conveyed the infection. Many of the children attacked were members of the same class and, after the first case, all were infants.

There is little doubt that the disease was conveyed from child to child by the air, while they were in school, or in the room in which hats and coats were hung. There was no influenza, typhoid, or other kind of illness affecting the school or

neighbourhood at the time, and there were no cases of catarrhal jaundice in the other schools of the district or amongst the general population round about.

Dr. M. I. Baker, who attended all the cases except two, which I saw myself, says they were mild with one exception. In this case there was severe initial vomiting, and pyrexia, 101° F. for four days. The urine contained a trace of albumin, which disappeared after a fortnight. There was a good deal of pain in the hepatic region and the liver was enlarged. In the two cases which I treated the temperatures were 98·4° and 98·8° F., and the pulse-rates 102 and 104 respectively, though bile salts as well as bile pigment were present in the urine. I have several times found a quickened pulse during the time bile salts were present in the urine, and in common with all other observers have failed to find slowing of the pulse in catarrhal jaundice in children. The liver was enlarged in both cases, but the spleen was not palpable. As the jaundice was disappearing the girl patient complained of itching when warm in bed, an unusual symptom in a child in the absence of urticaria.

There were no prodromal symptoms in any of the cases; there were nausea, vomiting, and anorexia about two days before the jaundice was evident, but at this stage the liver is presumably already inflamed.

One child complained spontaneously of xanthopsia, an interesting symptom and one whose occurrence has been denied by some authors.

The second epidemic, which differed considerably from the first, was at the Bridge School, Wealdstone, about five miles away from the Hendon school. Twelve school children were affected, and three mothers and four younger children caught the infection from children attending the school. There were no cases in other schools of the district, nor any isolated cases, so far as could be discovered, nor could any connexion between the two outbreaks be established.

Table II. gives the age, sex, and class of each child and the clinical details which were procurable. Great interest attaches to the rapidity with which the epidemic spread. All the 12 children were attacked within a period of 12 days, and the incubation period must have been very short (1, 2, and 3 days); whereas in the Hendon epidemic between the first and second cases there was an interval of 10 days, and between the cases of the brother and sister attacked (the latter probably infected by the former) 14 days; between the eighth and ninth and ninth and tenth cases, 26 and 19 days respectively elapsed. The longer incubation period may have been correlated with the lesser virulence. When I had the disease myself the incubation period cannot have been longer than three or four days. Cameron Gibson gives 3–14 days, but noticed intervals of 27 and 47 days in two instances. The very long intervals sometimes noticed may be explained by abortive cases being overlooked, or by the virus remaining active in a room and infecting a child indirectly.

In the Wealdstone school the girls have the upper floor, a central hall with class-rooms round it, and the boys the lower, to which a separate staircase gives access. There are no mixed classes. The first four cases occurred in one class-room, and affected children sitting at desks placed next to one another. Fringuet noticed a parallel phenomenon in a school epidemic, in which three boys and two girls, who sat at neighbouring desks, were attacked in turn.

Here again the general water-supply cannot be incriminated, and at the school little water was being drunk, and in any case the boys seldom use the cup provided, usually drinking it from their hands. With one exception the homes of the children attacked were good ones.

In this epidemic the first, sixth, eighth, and tenth, and possibly the twelfth, cases must have been abortive ones—namely, cases in which no jaundice developed. In one of these it was proved that the child had the disease, for he gave it to his mother and brother at home, and they developed the typical jaundice. On the analogy of other epidemic diseases such cases would be expected to occur, but they are either unusual or more probably overlooked.

TABLE II.—*Giving Particulars of 12 Cases of Catarrhal Jaundice occurring in Bridge School, Wealdstone.*

Case.	Sex and age.	No. of form.	Date of onset.	Other cases in same house.	Character of illness.
1	F., 8	2A	Feb. 25	—	Vomited for several hours, bringing up green mucus. Headache an dizziness; no jaundice.
2	F., 8	2A	Feb. 26	Mother and 3 younger children.	Sudden onset with severe vomiting of yellow mucus, rigors and pyrexia Pain in hepatic region. Furred tongue and sordes on lips; deep jaundice. Loss of weight, prolonged convalescence. Mother also had severe attack.
3	F., 7	2A	,, 27	—	Feb. 27: Malaise. Feb. 28: Jaundice of conjunctivæ. March 1: Deep jaundice for 3 weeks. March 4: Much bile pigment; trace of bile salts in urine; albuminuria. Liver two fingers' breadth below costal margin. Spleen not felt. Hereditary ichthyosis of skin; on appearance of jaundice some itching. Six weeks after onset still easily tired.
4	F., 8	2A	Mar. 2	—	Nausea, no vomiting; sore-throat; furred tongue. Jaundice lasted about a fortnight.
5	M., 11	2	,, 2	Mother.	Vomiting, dizziness, and headache. Sordes on lips. Slight jaundice of conjunctivæ. Mother had slight attack some days later.
6	M., 9		,, 2	—	Headache; some pain in hepatic region; no jaundice.
7	M., 8	5	,, 3	—	Vomiting of green mucus; headache; slight jaundice of conjunctivæ.
8	M., 9	4	,, 4	—	Vomiting of green mucus; headache; no jaundice.
9	M., 10	4	,, 4	Mother and brother.	Giddiness; headache; no vomiting; no jaundice. Mother and brother developed slight jaundice.
10	F., 7	2A	,, 4	—	Headache; dizziness; vomited yellow mucus; slight pyrexia; no jaundice.
11	F., 9	3A	,, 6	—	Vomited mucus and bile; slight pyrexia; slight jaundice of conjunctivæ and skin.
12	M., 9	4	,, 9	—	Nausea; no headache; no vomiting; jaundice doubtful.

The rather numerous cases of gastro-enteritis noticed during the Bloemfontein epidemic were probably abortive cases; the cases of pharyngitis noticed by Cameron Gibson may have been, though this is less probable. One case was noted by Falkner at Toowomba. Apart from these I can find no record of any in the various epidemics at home or abroad. The Wealdstone epidemic establishes their occurrence on a firmer basis than before.

The disease appears to be most infectious in the prodromal period and in the early stages, but the virus may remain active and be transported to a distance. Instances of spread by this means have occurred several times, and a good example was

published recently by Prosper Merklen under the title of "emotional jaundice." A girl was run into by a bicycle on Dec. 3rd, 1910. On the 5th she had headache, nausea, and a temperature of 38·4° C., and on the 6th jaundice. The jaundice only lasted seven or eight days, and on the 27th she went to stay with an uncle in the country in a household where there were four children. Two of these contracted the disease in a more severe form, one becoming ill on Jan. 8th and one on Jan. 17th, 1911. Another example of the virus remaining active was one I met with in 1912. In a family of 18 members the youngest child, aged 3 years, had catarrhal jaundice on March 6th, and six weeks later, on April 17th, the next youngest, a girl, aged 5½ years, was attacked. Schneekloth records that in a family two girls fell ill at eight days' interval, and an infant three months later. Krasnobaeff states that three brothers were attacked at intervals of three or four weeks, and then it was discovered that a child with jaundice had lived for a few days in the room at which they stayed. This proves conclusively that the virus can persist outside the body, though it is not improbable that carriers may play an important part in its dissemination.

Dr. Gibson thinks that there are two specific diseases described under the name "epidemic catarrhal jaundice," one attacking children and rarely affecting adults, the other affecting adults. It seems much more probable that the disease is usually confined almost entirely to people of one age owing to its slight infectivity. It attacks one form in a day school or one house in a boarding school. For instance, several boys in the sixth form of a public school were attacked two years ago, and none in any other form. In another, adults of similar age alone may be attacked as in the French barrack epidemics, in which young recruits usually suffer and in which a few of the dormitories alone are affected, but in one of which at least only old soldiers were attacked and the outbreak was confined to their special quarters. It is only in extensive epidemics that people of all ages are attacked.

The one possible mode of spread, except by the air, which would explain these epidemics, is by means of some biting insect. Mosquitoes, flies, and midges are excluded by the fact that it is not a summer disease; bedbugs and pediculi by the fact that it is as common amongst the better classes as amongst the poor. Fleas are unlikely to be the cause for the same reason, and in some instances I have been able to exclude them so far as they can be excluded. It is also unlikely because fleas are most common in July, August, September, and October, and least common in January, February, and March, the months in which catarrhal jaundice is most prevalent.

No other infectious disease was prevalent during either of these two epidemics, and they add to the evidence, which is steadily accumulating, that the disease is quite distinct and not merely a peculiar form of influenza, paratyphoid, or typhoid fever. I have advanced reasons elsewhere for attributing its occasional association with these diseases to coincidence. In one of my cases I had Widal's reaction done a fortnight after the jaundice had disappeared and it was negative. The positive agglutination tests with the bacillus typhosus and paratyphosus are probably due to the presence of bile in the blood, and no weight should be attached to a positive result until this is no longer present.

During the discussion on Dr. Guthrie's paper, already mentioned, Dr. R. C. Jewesbury mentioned the occurrence of epidemic jaundice in dogs. This was formerly held to be a severe form of distemper comparable to the jaundice which appears in the bad cases of yellow fever and relapsing fever, but it is more probably a distinct disease. Mr. Henry Gray gives an account of it in Hoare's "Text-book of Veterinary Medicine." He tells me that it is rarely seen in London, but that it occurs rather commonly in sporting dogs, especially after they have been in damp thickets, and causes a very heavy mortality. He is inclined to think that it is allied to or identical with the malignant jaundice investigated by Nuttall and proved to be due to a protozoon, piroplasma canis, conveyed by the bite of a tick. There seems to be no likelihood that it is the same disease which attacks man, and I can find no evidence that epidemics in man and in dog have occurred together.

In conclusion, I should like to thank Dr. C. W. F. Young and his assistant, Dr. R. A. Askins, Dr. Scanlan, and Dr. Baker, and also the head masters and mistresses of the schools, for the great trouble they took in supplying me with information.

Bibliography.—Cockayne, E. A.: Quarterly Journal of Medicine, October, 1912, pp. 1–29. Falkner: Australasian Medical Gazette, 1902, vol. xxi., p. 256. Gibson, Cameron: Public Health, March, 1914, p. 181. Guthrie, Leonard: Proceedings of the Royal Society of Medicine, vol. vi., No. 2, Section for the Study of Disease in Children, p. 48. Keynes, G. L.: St. Bartholomew's Hospital Journal, June, 1914, p. 147. Merklen, Prosper: Bulletin de la Société de Pédiatrie de Paris, 1911, p. 99. Nuttall, G. H. F.: Journal of Hygiene, 1904, vol. iv., p. 219. Nuttall and Graham-Smith: Ibid., 1905, vol. v., p. 237, and 1907, vol. vii., p. 257. Parkinson, J. Porter: Proceedings of the Royal Society of Medicine, vol. vii., No. 4, Section for the Study of Disease in Children, February, 1914, p. 75. Poignard, R.: Brit. Med. Jour., 1912, vol. i., p. 72. Schneekloth: Thèse de Kiel, 1900.

Harley-street, W.

SOME PROBLEMS IN CARDIAC PHYSIOLOGY:

CONTRIBUTIONS TO A STUDY OF THE RELATIONS WHICH EXIST BETWEEN THE VARIOUS CHAMBERS OF THE MAMMALIAN HEART.[1]

BY A. F. STANLEY KENT, M.A. OXON.,

HENRY OVERTON WILLS PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF BRISTOL.

PROBABLY all here are familiar with the history of the subject of this lecture, and are aware that before 1892 it was impossible to explain the action of the mammalian heart on the comparatively simple lines found adequate in the case of the heart of the frog, owing to the fact that any muscular connexion between auricle and ventricle in the mammal was absolutely denied. In 1892 it was shown that this idea was erroneous and that muscular connexion between auricle and ventricle did as a fact exist. In the following years the details of the connexion were worked out by various observers, and the band of tissue is now familiar to everyone as the auriculo-ventricular bundle. As is often the case with new knowledge, it was some time before the existence of the auriculo-ventricular bundle was used in explaining symptoms presented by clinical cases. Within the last few years, however, its importance has been fully recognised, and its presence has generally been referred to in explaining certain forms of cardiac irregularity. Certain difficulties have arisen in connexion with these explanations from time to time, and some have doubted whether the case

[1] A lecture delivered before the University of London at South Kensington on June 18th, 1914.

really is as simple as it appears. Clinical experience and experimental results have sometimes thrown doubt on the explanation put forward. The difficulties are of the following kind. Cases have occurred in which—if the published records are to be trusted—an interruption of the normal rhythm of the heart has been observed, although the auriculo-ventricular bundle has proved to be intact; and cases of normal rhythm have occurred in which the bundle was subsequently found to be destroyed. Many of these difficulties may be capable of solution. Some of them, however, appear to be insoluble.

So long ago as 1892 I described the existence of additional muscular connexion between the auricle and ventricle in the right lateral wall of the heart, and although this observation excited little attention at the time, it lived in the memory of some workers in cardiac physiology, and was sometimes glanced at as likely to afford a possible explanation of puzzling experimental results. My own work on the heart was unavoidably interrupted for some time, and it is only within the last three or four years that I have been able to return to it. The position was found to be as described. The presence of the auriculo-ventricular bundle was acknowledged, and it was regarded as the one and only path of muscular conduction between auricle and ventricle. And yet it was not adequate to explain the facts found clinically and experimentally.

The problems which presented themselves for solution, therefore, were the following:—

1. Do there exist anatomical paths of muscular connexion between auricle and ventricle other than the auriculo-ventricular bundle?

2. If such additional paths exist, what are their number, situation, structure, and connexions?

3. Are such paths—provided they exist—capable of forming a physiological connexion between the auricle and ventricle?

It appeared best to carry out the histological part of an investigation of this kind upon human material, as the labour involved would in any case be very great, and the whole of the work would have required to be repeated had other material been used. Such a selection made the work more difficult, as it is always troublesome to obtain human material sufficiently fresh to make good preparations. This and other difficulties were ultimately surmounted, however, and a minute examination of the whole of the auriculo-ventricular connexion was commenced. The method adopted was as follows. The whole of the auriculo-ventricular ring of the heart was divided up into blocks, and each block in turn was cut into sections. The sections were floated on to glass, stained, mounted, and examined. The stains found most generally useful were the connective tissue stain of Mallory, Heidenhain's iron hæmatoxylin, hæmatoxylin and safranin, and various modifications of the silver impregnation method. Stress should be laid on the fact that in the systematic examination of the ring every section in the series was stained and examined. In some researches it has appeared that not every section, but every alternate section, or even every third or fourth, has been examined. If it is desired to exclude once for all the possibility of the existence of any extra connexion it is obviously necessary that every section shall be examined. Many of the original series of sections have been repeated, sometimes again and again, for the purpose of confirming or of correcting the earlier results. Some of the more important conclusions are the following:—

1. *Neuro-muscular structures.*—There exist in the heart in the neighbourhood of the auriculo-ventricular groove on the left side of the organ neuro-muscular structures whose constituents are partly nervous and partly muscular, and which have connexions with the nervous structures of the groove and with the muscular tissue of auricle and of ventricle.

2. *Nodal tissue.*—There exists in the right lateral wall of the heart a mass of hitherto undescribed nodal tissue.

3. *Muscular connexions.*—In association with the second conclusion there exists at least one muscular path between auricle and ventricle along which impulses can pass, and which is able to keep the chambers in physiological association, even when the auriculo-ventricular bundle has been cut.

4. *Paths of physiological conduction.*—Experimental results have been obtained which completely bear out the anatomical fact of the existence of an additional muscular path between auricle and ventricle.

1. *Neuro-muscular Structures.*

The neuro-muscular structures can be described best by referring to the appearances which are found successively when a series of sections is examined. The structures lie in the connective tissue at the base of the auricle or ventricle. The first indication of their presence is the appearance of a few nerve fibres of small size amongst the connective tissue bundles. A few sections further on it is seen that the number of fibres has increased, and soon connective tissue is seen to be arranged round the group and to be forming a sheath for it. As the series of sections is followed the group of fibres becomes larger, and may attain a diameter of 170 mu. It now appears as a well-developed bundle of fibres surrounded by a well-formed capsule of connective tissue, inside which a definite and large lymph space can often be distinguished. If the bundle be followed further it will be seen that its constituents are changing. Instead of the nervous fibres forming the only kind of tissue present there are now more darkly staining fibres which can be recognised as muscle, very similar to the fibres of the neighbouring auricle or ventricle. Some, however, have different characters, appear at first sight to be tubular, and prove on closer examination to be composed of more or less structureless protoplasm in the centre, with striation and indication of sarcostyles at the periphery. These fibres bear some resemblance to the fibres of Purkinje found elsewhere in the heart.

The amount of muscle in the bundle gradually increases and may become large, whilst at some part of its course muscle fibres are given off from the bundle and become connected with the neighbouring auricular tissue. In other situations some of the nerve fibres may be seen to leave the bundle, and apparently to become connected with nervous structures lying in the connective tissue of the groove. Throughout their course these bundles are provided with a rich supply of blood-vessels. The complete organ then presents itself as a spindle-shaped mass commencing with a few nerve fibres of small size, increasing to a bundle of perhaps 170 mu. in diameter and somewhat resembling a nerve trunk, and richly supplied with blood. Soon muscle appears amongst the nerve fibres, assumes considerable proportions, and ultimately becomes connected with neighbouring muscular masses. The nerve fibres also appear to become connected with neighbouring nervous masses. The bundle is contained in a connective sheath in which lymph spaces may be seen.

2. *Nodal Tissue.*

This—the second structure to be described—is found in a different part of the heart wall. It is found in the auricular wall at a point almost on the extreme right lateral aspect of the heart, slightly towards the posterior surface. Amongst the bundles of auricular muscle in this situation will be observed a more circumscribed mass, partly surrounded by fibrous connective tissue, and in free communication with the rest of the auricular muscle. The mass may be nearly circular in outline, or it may be distinctly olive-shaped. In either case it is seen to consist of an outer part which is similar to normal muscle, and a central portion which shows modifications of the kind usually associated with nodal tissue. The tissue stains differently, its fibres are often exceedingly fine and show rich branching, and the cross striation is not very easily seen. The blood-supply is rich.

3. *Muscular Connexion.*

Associated with the presence of this nodal tissue is the existence of a muscular path leading from the auricle to the ventricle and forming a channel along which impulses are able to travel. This path is found at the lower part of the mass of nodal tissue, and is formed by the passage of strands of ventricular fibres derived from two or three different layers of the ventricular wall upwards and outwards until they come into association with the tissue of the node. Thus the node is, as it were, interposed in the course of the muscular path between auricle and ventricle, and any impulse passing from auricle to ventricle would necessarily pass through the tissue of the node. The need for such an arrangement is apparent when the physiological conditions are considered. For, as suggested in 1892, the interposition of the fine fibres of the node with their altered character results in a slowing of the rate at which the impulse travels, and thus the pause between the auricular and the ventricular contraction is brought about.

4. *Experimental Results.*

That the existence of such a channel of communication between the auricle and the ventricle will render necessary important alterations in our ideas of the mechanism of the coördination of the action of these chambers is obvious. For if, contrary to preconceived ideas, the auriculo-ventricular bundle is not as a matter of fact the sole muscular path along which impulses may pass from auricle to ventricle, its destruction does not necessarily involve the interruption of such passage, and clinical cases and experimental results—hitherto difficult of interpretation—become intelligible. Direct experimental results are, therefore, of especial interest.

The following experiments, amongst others, have been carried out. In the exposed heart of the mammal the bundle has been cut and electrocardiograms have been taken subsequently. These showed that the rhythm between auricle and ventricle persisted.

The experiments performed by Flack and Leonard Hill showed that there existed at the right lateral region of the heart a mechanism which under certain circumstances was capable of affecting the auriculo-ventricular rhythm.

More recently I have carried out the following experiments directed especially to the clearing up of the question. The method adopted was simple. In the beating heart of the mammal a thin knife was passed through the right ventricle near the groove, and brought out in such a way as to sever completely the auricles from the ventricles with the exception of a strip of tissue at the right side of the heart. Under these conditions it is found that beats arising spontaneously in the right auricle pass through to the ventricle and evoke ventricular beats, and, after the heart has ceased to beat spontaneously, beats excited artificially in the auricle still pass through to the ventricle and give rise to ventricular beats.

Since under these conditions the only tissue connecting the auricle to the ventricle is the strip at the right side of the heart, and the histological part of the inquiry has already shown that an anatomical connexion exists in this situation, it is impossible to avoid the conclusion that in this right lateral auriculo-ventricular junction there exists a muscular path capable of transmitting impulses and of coördinating the action of the chambers of the heart.

Further, since, as has been shown, the muscular path is completed by the interposition of a mass of nodal tissue through which the impulses must pass, it is clear that the conditions here are similar to those found in the case of the auriculo-ventricular bundle, and that the auriculo-ventricular pause may be explained on similar lines—i.e., as being due to the passage of the impulse over tissue modified histologically and physiologically with a resulting delay in conduction.

It is clear that the above considerations must exercise a considerable influence upon the nature of our explanation of cardiac action.

[The lecture was illustrated by numerous lantern slides, drawings, photographs, and preparations.]

Bristol.

A CASE OF

TUBERCULOUS DISEASE OF VERTEBRÆ

COMPLICATED BY AN EXTENSIVE ACUTE SUPPURATIVE MENINGITIS.

BY JAMES MILLER, M.D. EDIN., F.R.C.P. EDIN.,
LECTURER ON PATHOLOGY AND BACTERIOLOGY AT THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH;

AND

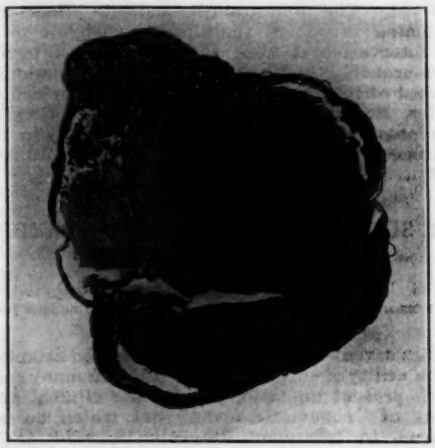
A. FERGUS HEWAT, M.B., CH.B. EDIN., M.R.C.P. EDIN.,
TUTOR IN CLINICAL MEDICINE, UNIVERSITY OF EDINBURGH; LECTURER, EDINBURGH POST-GRADUATE VACATION COURSE.

THE following case, which we are enabled to report through the kindness of Dr. Harry Rainy and Dr. Theodore Shennan, shows certain features of clinical and pathological interest.

Clinical history.—The patient, 22 years of age, was seen by one of us after he had developed symptoms of acute meningitis. We were able to elicit the following history from his relatives. In June, 1912, the patient had complained of vague pains in his back, and in consequence had consulted his private medical attendant, who examined him most carefully. Nothing definite could be made out, and he was advised to return if any further symptoms developed. This he did not do. At the end of September, 1912, he is reported to have strained his back, and at the same time an abscess burst posteriorly and developed into a running sore. He was living in the country at the time and was sent to the Edinburgh Royal Infirmary, where he was seen by one of the charge surgeons who diagnosed the condition to be a typical case of Pott's disease accompanied by a ruptured cold abscess. He was treated along the usual lines and he improved vastly, the ulcer almost completely healing up. After this he tried unsuccessfully to find work. On Dec. 3rd, 1912, he retired to bed complaining of feeling giddy and

sick, with some headache. He made no complaint of pain in his back. About 3 o'clock next morning he vomited and became very restless. He appeared to be insensible to what was said to him. Three hours later he vomited several times and complained in a vague way about pain in his forehead. General irritability was very pronounced. He was sent to the Edinburgh Royal Infirmary forthwith.

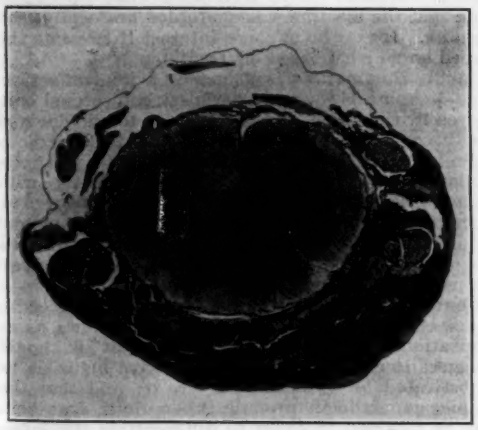
FIG. 1.



Section of spinal cord and meninges in cervical region.

Physical examination on admission.—The patient showed signs of cerebral irritation. At times he lay on his side, and then would roll from side to side. The lower limbs were drawn up. The arms were at times folded across the chest, and then he made purposeless movements in the air. His eyes were half closed and he mumbled inarticulate words. The abdomen showed no retraction and tache cérébrale was absent. Temperature, 100·5° F.; pulse, 96.

FIG. 2.

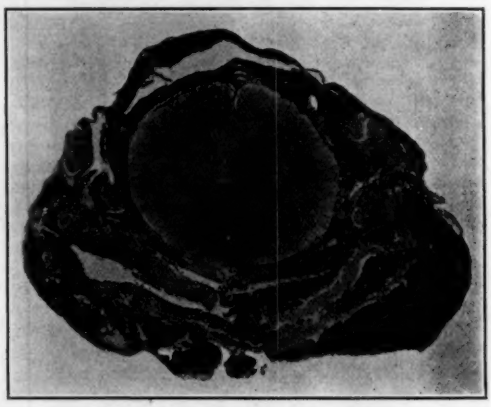


Section in lumbar region.

He was in a semi-conscious state, but was able to swallow milk and other fluids. As far as one could test the function of the cranial nerves, there seemed to be no definite impairment of function. Motor power was impaired all over. He was extremely sensitive to stimuli of all kinds. Considerable photophobia was present. Reflexes: abdominal and epigastric absent on both sides; plantar, flexion on both sides. Achilles and knee-jerks were slightly increased. The latter were difficult to elicit because of the tightening of the hamstrings. Kernig's sign was markedly positive. No rash on the skin was visible. The heart was slightly dilated; the sounds were closed but soft. He flushed frequently, and his vaso-motor control was much impaired. Lungs: some apical impairment on both sides with harsh breath sounds. The rest of the lungs appeared normal. The tongue was dirty. Anterior abdominal muscles were rather tense, but no definite boarding could be made out. The bowels were constipated. The stomach, the liver, and the spleen were not enlarged. The urine was high coloured with urates. There was no albumin or sugar. A discharging wound was situated on the back, just below the level of the crest of the ilium, about one and a half inches from the middle line on the left side. The sinus ran in an upward and inward direction.

Treatment and progress.—The patient was placed on a water bed and given milk every four hours. Lumbar puncture was performed and thinly purulent cerebro-spinal fluid came out under tension. This was found to contain capsulated streptococci in short chains. They retained Gram stain. The patient was given urotropine gr. xv. every four hours and an analgesic powder. Dec. 5th: The patient was very restless all night and did not react to large doses of bromide and chloral. The bowels were freely moved which gave some relief.

FIG. 3.



Section in dorsal region. Note the acute inflammation and very extensive exudation all around the cord in Figs. 1, 2, and 3.

6th: Much more pus came from the wound in the back, and along with it a good deal of clearer fluid like cerebro-spinal fluid. 7th: The patient was distinctly weaker. The pulse and temperature rose as the evening advanced. Lumbar puncture was again performed, but no fluid came away. 8th: He was much worse. There was some retraction of the abdomen Paralysis of the seventh and third nerves on the left side was noticed, and pus appeared in the conjunctival sac. The optic discs were examined frequently, and with the fleeting glance one got of them no optic neuritis could be made out.

Abstract from the Post-mortem Report.

The body was that of a young man poorly nourished. An ulcer measuring 3 in. by 4 in. was present over the upper part of the sacrum on the left side. Extensive adhesions were present in the abdominal cavity. Adhesions were present at both apices and at the base of the right lung. Brain: The vessels were uniformly congested and the convolutions were flattened. At the base of the brain, in the interpeduncular space and in patches over the inferior surface of the cerebellum and the temporo-sphenoidal lobes there was a thick creamy exudate. This thick yellow exudate also covered the pons, medulla, and the whole of the spinal cord. The exudate was of extraordinary thickness in the lumbar region. (See Figs. 1, 2, and 3.) In the sacral region, on either side of the spinous processes,

the muscles were infiltrated with purulent material. The lower portion of the spinal column was removed and an antero-posterior section was made through the bodies of the vertebræ. A small cavity containing purulent material was found in the disc between the fourth and fifth lumbar vertebræ. This cavity communicated with the spinal canal. The bodies of the vertebræ above and below were infiltrated with yellow purulent material. Films made from the exudate

FIG. 4.

Section through lower lumbar vertebræ and sacrum. Note abscess cavity and sequestrum above it in the body of the vertebræ.

in the cerebral and spinal meninges, also from the pus in the cavity in the spine, showed long chains of a capsulated diplococcus. Cultures were made from the exudate and the following organisms were isolated: (1) a Gram-positive streptococcus in comparatively long chains and showing a well-marked capsule; (2) a Gram-positive bacillus; and (3) a yeast.

Microscopic section of the brain and spinal cord showed an extensive fibrinous exudate on the surface of the pia arachnoid, in the meshes of which numerous polymorphonuclear leucocytes could be seen. Here and there masses of cocci were visible in suitably stained preparations. Sections of the affected vertebræ showed marked infiltration of the spaces between the bony trabeculæ, with fibrin and polymorphonuclear leucocytes. These showed in places a tendency to degenerate and undergo necrosis. Masses of cocci could be seen. After examining a number of preparations a small focus of undoubted tuberculous nature was found.

The pathological findings indicate that the case was originally one of tuberculosis of the vertebræ, although the disease had not advanced far. A terminal infection with streptococcus mucosus occurred. The appearances indicate that this originated in one of the affected vertebræ or in the intervertebral disc, the source of infection being probably the ulcer on the back. The organism isolated corresponded to that described by Schottmüller, Neumann, and Lingelsheim, and called "streptococcus mucosus." The exudate in the meninges was unusual from its extraordinary thickness.

THE SURGICAL TREATMENT OF STREPTOCOCCIC ARTHRITIS.

BY JOHN O'CONOR, M.A., M.D. T.C.D.,
SENIOR MEDICAL OFFICER TO THE BRITISH HOSPITAL, BUENOS AIRES.

SOME seventeen years ago I first invited attention to the utility of surgical intervention in many cases which present all the characteristic clinical symptoms of "rheumatic fever," but which do not respond to treatment by salicylic acid or its derivatives.[1] Five years later I amplified my views on the subject and published a series of cases showing the value of incision with irrigation and drainage of infected joints.[2]

During the past ten years I have performed 214 arthrotomies, the majority being for recalcitrant cases of acute "rheumatic" arthritis. As it would be superfluous to occupy space with notes of scores of individual cases, I will merely state that the mortality has been *nil*, that there has not been a case of septic infection, that in not a single instance has a valvular lesion developed after operation, and that the treatment has afforded uniformly good results. It may be of some interest if I restate the creed on which I based my treatment.

Acute rheumatism is primarily a joint affection, due to some pathogenic germ (streptococcus) conveyed by the blood from an infected tonsil, decayed teeth, or some lesion in the intestinal mucous membrane. The joint invasion is promptly followed by a form of acute arthritis with general toxæmia, and the infected joints serve as incubators, where the poison is elaborated and poured into the circulation and thus conveyed to other articulations and to the cardiac valves. In some cases the joints retain the virus in a latent condition until some chill or other cause rouses it into activity. Holding such views as to causation, it naturally followed that I should suggest that the term acute infective arthritis be substituted for rheumatic fever, &c., and that the names gonorrhœal,[3] pyæmic, tuberculous, syphilitic, &c., be retained in order to differentiate the infection peculiar to each.

I wish once more to draw attention to a form of infective cellulitis which not infrequently appears to be the dominant manifestation of the disease about ankle-joints and wrist-joints, sometimes associated with apparent arthritis of these joints

[1] Acute Rheumatic Arthritis, Glasgow Medical Journal, October, 1897.
[2] 150 Arthrotomies, THE LANCET, April 12th, 1902, p. 1061.
[3] Surgical Treatment of Gonorrhœal Arthritis, THE LANCET, Dec. 9th, 1899, p. 1585.

and sometimes not. Owing to the almost constant existence of this condition in cases of severe multiple infection, I considered it necessary to employ the comprehensive pathological title[4] "acute infective arthritis and cellulitis." I now think it opportune to conform with recent bacteriological teaching and adopt the simple and definite term streptococcic arthritis.

As to treatment,[5] I make it a rule to operate on cases which do not promptly yield to medical treatment (sod. salicyl. ℥ss., sod. bicarb. ℥i., three hourly; salines, milk diet, woollen clothing, &c.). All infected joints are opened, flaky turbid lymph is evacuated, free irrigation with warm oxygen water, drainage-tubes inserted and retained *in situ* for three days. Multiple incisions are made into areas of periarticular cellulitis and hot mercurial fomentations applied. Splints are employed for immobilisation purposes for from seven to ten days, at the end of which the patient is requested to commence graduated active moment. When wounds are healed gentle massage is prescribed.

Buenos Aires.

[4] Annals of Surgery, April, 1899.

[5] Surgical Treatment of Rheumatic Fever, THE LANCET, Jan. 24th, 1903, p. 223.

THE TECHNIQUE OF ABDERHALDEN'S SERUM REACTION.

BY W. E. BULLOCK, M.D. EDIN., B.SC. LOND.,
ASSISTANT, IMPERIAL CANCER RESEARCH FUND.

IN November of last year a series of experiments were commenced with the object of determining the value of Abderhalden's serum reaction—dialysis method—in the diagnosis of cancer. The results obtained by following exactly Abderhalden's technique were inconclusive, as the examples given later show. The principles of the reaction have been stated and the chief details of the dialysis method described so often that it is unnecessary here to do more than emphasise certain points in so far as they bear upon the modifications in the method to be suggested in this paper.

Ninhydrin, the reagent used to test for the decomposition products of proteins, reacts with numerous other substances, as was shown by Neuberg.[1] Dextrose is the most important of these substances owing to its presence in blood serum. When 0·2 c.c. of a 1 per cent. solution of ninhydrin is boiled for a minute with a dilute solution of glucose in distilled water a transitory red colour is obtained. If normal saline be substituted for the distilled water the colour obtained is more or less permanent. The same reaction takes place with other sugars—e.g., galactose, maltose, &c. This formation of colour with sugars probably explains the various reddish shades of purple often obtained in testing dialysates in experiments with blood serum. Abderhalden's explanation[2] of these colours is that either the experiment has been carelessly carried out or the blood contained acids or alkalies.

In carrying out a test 0·2 c.c. of ninhydrin solution is added to 10 c.c. of a solution of albumin, peptone, or amino-acids, and the mixture boiled for one minute. In order to secure regular boiling and to prevent "bumping" Abderhalden recommends "boiling sticks" made of wood and specially prepared; the small pieces of unglazed porcelain or broken glass ordinarily used by chemists are equally efficient. An extraordinary stress has been laid on "boiling for exactly one minute." Whilst it is obviously necessary to boil the tubes an equal length of time—and experience has shown that one minute's boiling is sufficient—the importance attached to this rule naturally suggests that a method by which the tubes are heated together would be preferable to that of boiling each tube separately in the Bunsen flame. Such a method has been adopted in the apparatus devised for the purpose by Abderhalden,[3] who nevertheless uses it only for testing tubes in preliminary experiments with dialysing sacs and not for actual serum experiments. A simple and satisfactory method for solutions of leucin is to place the test-tubes containing the dialysates to be tested in boiling water and to remove them again in nine minutes. In order to reduce the amount of evaporation the tubes may be lightly corked after they have been two minutes in the bath.

In comparing the results of the ninhydrin tests it is sometimes difficult to judge small differences of tint when the colours are compared in ordinary test-tubes. This difficulty has been overcome by the use of tubes 23 cm. long by 9 mm. bore, made of colourless glass. The boiling with ninhydrin is carried out in a test-tube, and the liquid is then poured through a small funnel into one of the long narrow tubes. A comparison of colour is made by holding the tubes on a sheet of white paper in a good light and looking directly on the column of liquid. Small differences are easily detected in this way. These tubes are also well adapted for a comparatively rough but very useful method of obtaining an idea of the quantitative differences in colour. 1 c.c. of the liquid with the weakest reaction to ninhydrin is placed in one of the long tubes and distilled water added until only the faintest violet colour is visible when the column of fluid is looked at through the open end of the tube. As a rule—at least when 0·5 c.c. of blood serum is used as the minimum dose in an experiment—it is not necessary to add any water at all. This tube is now the standard colour and volume. A cubic centimetre of liquid is taken from each of the ninhydrin tests and diluted until a standard volume is of a standard colour. The amount of water added is a measure of the depth of colour.

Examples of Results obtained by using Abderhalden's Technique.

1. Sera from rats bearing a tumour (rat tumour 9) and from normal rats were obtained after starving the animals for 18 hours. The sera were clear and free of hæmoglobin and were used immediately.

Serum.	Substrate.	Ninhydrin test.	Biuret test.
1·5 c.c. normal.	1 g. (approximately) rat tumour 9.	+	–
1·5 c.c. tumour.	,, ,,	+	–

2. The experiment was repeated.

Serum.	Substrate.	Ninhydrin test.	Biuret test.
1·5 c.c. tumour.	Rat tumour 9.	++	–
1·5 c.c. ,,	,,	+++	–
1·5 c.c. normal.	,,	++	–
1·5 c.c. tumour.	Nil.	–	–
1·5 c.c. normal.	,,	+	–

[1] Biochemische Zeitschrift, 56, 500, 1913.

[2] Abwehrfermente, fourth edition, p. 275.

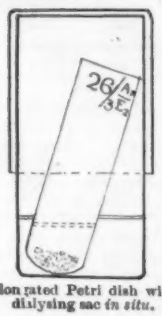
[3] Münchener Medizinische Wochenschrift, No. 5, p. 233, 1914; and Abwehrfermente, fourth edition, p. 232.

3. Rabbit placenta was prepared as substrate; a pregnant rabbit and a buck were starved for 18 hours and then bled from the ear vein. The sera obtained were clear and free of hæmoglobin.

Serum.	Substrate.	Ninhydrin test.	Sulphosalicylic acid test.
0·5 c.c from doe.	Rabbit placenta.	–	–
1·0 c.c. ,,	,,	–	–
1·5 c.c. ,,	,,	++	–
2·0 c.c. ,,	,,	(+)	–
0·5 c.c. ,,	Nil.	–	–
1·0 c.c. ,,	,,	(+)	–
1·5 c.c. ,,	,,	+	–
2·0 c.c. ,,	,,	+	–
0·5 c.c. from buck.	Rabbit placenta.	–	–
1·0 c.c. ,,	,,	–	–
1·5 c.c. ,,	,,	++	–
2·0 c.c. ,,	,,	+++	–

There was not sufficient serum from the buck to set up the control of serum alone.

It is obviously impossible to draw any conclusion from such results. The most striking point is the irregularity of the depth of the ninhydrin test of the dialysates. In the last experiment quoted, for example, the dialysate from the test, 2 c.c. of serum from pregnant rabbit plus rabbit placenta, contains less ninhydrin-reacting substances than the dialysate of the preceding test with 1·5 c.c. of serum. Abderhalden's explanation of such results[4] is that the digestion of the substrate has proceeded further (more amino-acids produced) in the test in which 1·5 c.c. of serum was employed than in the other case. The explanation is not satisfactory, however, since the conditions under which the tests were made were similar. The following experiment shows that the dialysing tubes were the source of error. Forty of Schleicher and Schüll's dialysis tubes, No. 579 A, 16 mm. by 50 mm., were well soaked in water and then tested with 2·5 c.c. of a 5 per cent. solution of egg-white. The tubes which permitted egg-white to pass were discarded; the remaining impermeable tubes were well washed with water, sterilised in the autoclave, and then tested with 2·5 c.c. of a 5 per cent. solution of Witte's peptone. The sacs were separated into groups according to the depth of the ninhydrin reaction. In my experience with about 100 of these sacs the largest group of equal permeability out of 40 consists of 5 or 6. The largest group of sacs thus obtained were well washed and sterilised in the autoclave and again tested with peptone; the ninhydrin reactions were strikingly unequal.



Elongated Petri dish with dialysing sac *in situ*.

This alteration in the permeability with sterilisation renders the sacs practically useless, and it was therefore decided to attempt to prepare dialysing tubes of collodion. At the same time the Erlenmeyer flasks recommended by Abderhalden were replaced by elongated Petri dishes of suitable size. (See Figure.) For the dialysing sacs described below the inner cylinder measures 4 cm. by 8 cm., the outer 4·5 cm. by 5 cm. These cylinders are washed separately, put together, and wrapped in paper, and then sterilised in hot air.

Preparation of dialysing sacs.—By numerous experiments with solutions of varying concentrations of pyroxylinum in alcohol and ether of varying proportions it was found that sacs of almost any degree of permeability could be prepared. For the purposes of the Abderhalden reaction the following concentration of collodion is required: gun cotton, 2·6; absolute alcohol, 33 c.c.: and ether, 67 c.c. The gun cotton is dried to constant weight by exposure to air; the alcohol is poured over it, contained in a stoppered bottle. After 24 hours the ether is added, and the clear solution obtained is ready for use.

Schleicher and Schüll's extraction thimbles, No. 603, 22 mm. by 80 mm., are taken and shortened by a centimetre. A number and the number of times the thimble is to be immersed in collodion and the relative proportions of ether and alcohol are written with India ink on each tube, thus, for sac No. 26:— $26/_{3}\frac{A_1}{E_2}$. By this means a record of the behaviour of each sac is easily kept.

The sacs are now boiled in a mixture of equal parts of alcohol and ether in order to displace and disperse the air from the interstices of the paper. They are then filled and covered with collodion of the composition given above. After the lapse of an hour the tubes are taken out of the collodion, allowed to become almost dry, and then replaced for ten minutes. This is repeated, and the tubes when almost dry are placed in distilled water. By these processes the paper of each thimble becomes impregnated with collodion, and six layers (three inside and three outside) of the same material are formed.

It is important to remember that the concentration of the collodion is rapidly altered by evaporation of ether, and to a less extent of alcohol. The collodion should therefore be freshly prepared and a fair number of sacs (say 16) made at one and the same time. This is easily done if sufficient collodion is prepared to make 25. The thimbles are boiled in the alcohol-ether mixture contained in a saucepan; the fluid is poured off, and the thimbles are then covered with the collodion. The lid of the saucepan is fixed tightly to reduce evaporation.

The freshly made sacs are quite impermeable to solutions of egg-white, and are easily permeable to a 2 per cent. solution of Witte's peptone or to silk-peptone of a much lower concentration. After being used several times—and consequently sterilised several times—the collodion tubes become more permeable. It is now possible to distinguish between minute amounts of Witte's peptone, as the following experiment illustrates, and at the same time the sacs are impermeable to albumin.

The delicacy of ninhydrin as a reagent for Witte's peptone is rather better than 1 in 1000—i.e., 0·01 grm. in 10 c.c. To 20 c.c. of water 0·22 grm. of Witte's peptone was added and 2 c.c. of the solution placed in each of half a dozen collodion sacs and the sacs dialysed for 18 hours against 20 c.c. of distilled water; the dialysates give a faint and equal reaction with ninhydrin. 0·26 grm. of Witte's peptone was dissolved in 20 c.c. of water, and in each of six collodion sacs 2 c.c. of the solution was placed and dialysed for 18 hours against 20 c.c. of water. The dialysates were tested with ninhydrin and gave an equal result of a distinctly deeper tint than the dialysates from the first set of tubes. It is thus possible to distinguish between 0·2 grm. and 0·24 grm.

[4] Abwehrfermente, English translation, pp. 200-201.

(approximately) each contained in 2 c.c. of water. In other words, the degree of permeability of the collodion sacs to peptone corresponds at least to the delicacy of the ninhydrin reaction with the same substance. And since the substances to be detected in an actual experiment with blood serum are in my experience invariably amino-acids, the delicacy of these sacs is even greater than the experiments above indicate.

When the sacs have been in use for some time (six to eight weeks) and have been sterilised in the autoclave about 20 times they become permeable to albumin, and are then useless for the purposes of serum tests. There is thus a gradual increase in permeability, and it is only during the middle part of the "life" of a sac that the requirements of the Abderhalden reaction are complied with ideally—viz., (*a*) impermeability to serum albumin and globulin; (*b*) easy permeability to Witte's peptone; and (*c*) unalterability with sterilisation. Since, however, in an actual experiment amino-acids are always tested for—peptones in my experience being never found in the dialysate—the early life of a sac is perfectly satisfactory. But it is obvious that in any given experiment the sacs employed should have been made together at the same time, and should have been autoclaved an equal number of times.

The results obtained with such tubes will be published in a subsequent paper, but it may be pointed out here that by the use of graduated doses of serum and by invariably testing the dialysate with sulpho-salicylic acid a constant record of the permeability of the sacs is kept. Since sulpho-salicylic acid detects 1 part of albumin in 40,000 of water, it is clear that any alteration in the behaviour of the sac towards albumin is indicated at the earliest possible moment and before quantities recognisable with ninhydrin can pass. And, further, by the use of graduated doses of serum any alteration in the permeability of the sacs to amino-acids would be indicated by discordancy in the results of the ninhydrin tests.

THE GEOGRAPHICAL DISTRIBUTION OF APPENDICITIS.[1]

BY R. W. MURRAY, F.R.C.S. ENG.,

HONORARY SURGEON, DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

THERE can be no doubt that inflammation of the vermiform appendix is met with far more frequently now than was the case 20 years ago. Not only so, but from my own experience I am convinced that the type of the disease has altered. When treating appendicitis 20 years ago my general practice was to apply fomentations and attend to the bowels. I very seldom had occasion to operate, and when I did it was merely with the view of opening an abscess. The immediate and after results of this treatment were satisfactory. To-day, owing to the more virulent type of the disease, such treatment would surely end in disaster, and in common with most surgeons (I wish I could say all surgeons) I arrange for an operation as soon as the diagnosis has been established. This line of action has been forced upon surgeons owing to the rapidity with which gangrene of the appendix occurs, and the frequency with which concretions are found within its lumen.

[1] A paper read before the Liverpool Medical Institution.

The Etiology of Appendicitis.

Why is it that appendicitis has increased in frequency and altered in type? A very natural and interesting question, but by no means an easy one to give a satisfactory answer to. This communication is an endeavour to find an answer, and I have accumulated certain evidence which I believe may help in solving the riddle. However, before adducing my evidence I wish to draw particular attention to a paper which appeared in the *Liverpool Medico-Chirurgical Journal* in 1910. This paper, entitled "The Etiology of Appendicitis," was written by that brilliant young physician, the late Dr. O. T. Williams, and to my mind is by far the most important pronouncement on this subject which has appeared in recent years. In a previous communication Dr. Williams had shown that intestinal sand, appendix concretions, and the large bodies resembling gall-stones sometimes found in the intestines are allied in chemical constitution and formed of fat compounds. In the paper to which I refer he says:—

> This contribution records further observations on the relation of abnormal fat processes to the etiology of appendicitis, and shows that similar changes occur *in the wall of the appendix itself*. ..... Concretions do not occur in all cases of appendicitis, but the following investigation into the nature of the changes taking place in the appendix shows that the process by which they are formed may go on in the wall of the appendix and give rise to morbid conditions which allow of early invasion by micro-organisms, and thus to the acute and chronic forms of appendicitis. These changes are the formation of calcium soaps in the mucosa and submucosa of the appendix. These soaps, normally expelled into the lumen of the appendix and then into the cæcum, in cases of appendicitis block up the lumen of the glands or (as in many of the specimens obtained) form almost a complete ring in the submucosa. ..... The changes cannot be due to involution, as they are seen in specimens obtained from cases occurring in children. ..... The important question consequently arises whether this change is the cause of the disease, or whether there is some underlying cause which produces these changes and the disease. From what we know of the formation of these calcium soaps it is a very slow process, and therefore must have commenced long before the attack of acute disease. It may therefore be presumed that these fat changes go on, produce the altered condition of the mucous membrane, or in some instances form an impermeable barrier in the submucosa, cutting off the nutritive supply to the already altered mucous membrane. The invasion by organisms is thus rendered much easier. ..... Sections of appendices stained by the methods used by Koltz and Lorrain Smith show the colour reactions from which the nature of the chemical changes in the wall has been deduced. The specimens were obtained from appendices removed by operation and placed immediately in formol. ..... The nature of the fats in the food determines to some extent the nature of the fats in the tissues. It would therefore seem that as these abnormal processes are set up by saturated fatty compounds (palmitic and stearic) and not by unsaturated fatty compounds (oleic), the nature of the fat in the diet might have some influence in their production. This is made still more likely when we recognise that the absorbability of these two forms of fat is so different.

In order to ascertain whether an excess of saturated fat (as in beef or mutton) in the diet is more liable to produce the disease than unsaturated fat (as in olive oil) Dr. Williams wrote to His Majesty's representatives in all countries having a population of over 2,000,000, and "the statistics showed an increasing incidence in appendicitis in those countries where much saturated fat is consumed." I have quoted at some length from the paper of Dr. Williams, not merely on account of the interest and importance of his remarks, but also because they lead up to the clinical facts I have

gathered together, which are complementary to his views.

Results of Inquiry into its Geographical Distribution.

So far as the geographical distribution of appendicitis is concerned the information obtained by Dr. Williams referred, for the most part, to the inhabitants of large towns. I thought it would be interesting to extend the inquiry, so a few months ago I wrote to medical men practising in more remote parts of the world, asking whether they commonly met with cases of appendicitis, and if it occurred among the natives in that district. One weak point regarding evidence so obtained is that practitioners in these distant regions may not have sufficient clinical knowledge to make their diagnosis of appendicitis sufficiently reliable. In order, as far as possible, to obviate this error I made a careful selection of the men I wrote to, most of whom hold hospital appointments and have been in practice in that district for some years. Although I have already acknowledged their letters, I must take this opportunity of once again thanking these gentlemen for so kindly furnishing me with most interesting and useful information.

I now propose to take you for an appendicular trip round the world. The following are the chief points contained in the letters I have received:—

Nyassaland, Central Africa.

1. I have never seen appendicitis amongst the natives.

2. I asked Dr. Caverhill, of the Blantyre Mission, who has charge of the native hospitals and has been in this country ten years, and he authorises me to state that in 5000 in-patients he has never seen a case of appendicitis in a native.

3 I have met with four cases here in Europeans: two yielded to palliative treatment, two were operated upon.

A. H. BARCLAY.

Fez, Morocco.

Among the natives in Morocco appendicitis is a very rare disease. During my 16 years in the interior I can recall only two cases. I have seen several cases among Europeans, but my work lay chiefly among the natives.

E. S. VERDON.

English Mission Hospital, Jerusalem.

Amongst the Jews here we see appendicitis less frequently than at home. I have only attended 12 cases since 1909. A medical man here of my acquaintance has during the past four years seen only one case of appendicitis among the natives proper. Jewish living is rather more civilised than the native living.

C. H. CORBETT.

The Victoria Hospital, Damascus.

Appendicitis is fairly common in these regions. As you can readily understand, many such cases are overlooked or misunderstood. The medical men in these outlying districts are not always capable of diagnosing them. During the past nine months I have operated upon half-a-dozen cases.

FRANK J. MACKINNON.

I regret that Dr. Mackinnon, who has been resident in Damascus for over 20 years, did not state whether this disease is more commonly met with now than when he first came to the city, and whether it was more prevalent in one nationality than another in this ancient and cosmopolitan city, for Sir Frederick Treves tells us that here are to be seen customs and details of living which appear to the traveller now just as they did four centuries ago when the Caliphs reigned.

In *India* appendicitis is commonly met with in the large cities, but there is a general consensus of opinion among medical men practising in India that this disease does not occur among the natives in the outlying districts.

Membakut, British North Borneo.

In two years' residence on the West Coast of Borneo I only remember seeing one case of appendicitis, and that was in a coolie, an indentured Chinaman. As regards the occurrence of this disease among natives, my experience is of small value because native labour is very little used on estates and I rarely have a native as a patient.

R. S. ROPER.

Chung King, Western China.

In all my 16 years in China—most of it spent in West China—I have only seen one case of appendicitis in a Chinese, so am forced to the conclusion that the disease is very rare and hardly exists in the Chinese.

I beg to offer the following explanation why in my opinion the disease is so rare in the Chinese. Appendicitis is a rare complaint because a Chinaman eats on an average only two meals a day, but takes a good square meal of four or more bowlfuls of beautifully cooked rice and vegetables (meat or fish very seldom), and he sits down and takes a long time over his meal. The chief meat in China is pork, and the average Chinese cannot afford to buy it. The Chinese have beautiful white teeth, so that in addition to the time he takes over his meals he always masticates his food well.

RICHARD WOLFENDALE.

Pakhoi, South China.

I have not seen a single case of appendicitis during the 10 years I have been in China. I think you will find that this applies to the whole of South China.

H. GORDON THOMPSON.

Moukden, Manchuria.

None of us have seen a case of appendicitis amongst the Chinese here. I am wrong—one of us saw one case which, however, was not operated upon. One of the Pekin men told me that cases do occur amongst the Chinese there, so we may hope still!

R. HOWARD MOLE.

Territory of Papua (New Guinea).

I have been in Papua for nearly ten years, living mostly in close contact with the natives, most of the time either as medical officer or resident magistrate, and have been struck by the rarity of appendicitis. While in this country I have seen a very mild attack in a European, one rapidly fatal case in a Samoan, and one typical attack followed by recovery in a native Papuan cook boy of my own. Beyond these three I have never seen a suspicious case, and it is remarkable that the only Papuan case was one where the patient had practically taken to European food and mode of living.

W. M. STRONG,
Acting Chief Medical Officer.

Yarloop, Western Australia.

In answer to your question about appendicitis, I do not often see it here. In our hospital in-patients average 120 a year, and only 2 per cent. are cases of appendicitis. I believe it is very prevalent in the large towns.

S. C. MOORE.

British Solomon Islands.

During the past three years I have never met with a case of appendicitis amongst the natives or heard of one. Among the white population I heard of a man who was taken suddenly ill, shipped off to Sydney, and successfully operated upon for appendicitis.

R. H. S. MARSHALL.

Trinidad, B.W.I.

We have had a good many cases of appendicitis here during the last few years. They have occurred, however, chiefly among those of European birth or descent. Personally I have not met with any cases among the coloured races. The population of this island is about 330,000, and, roughly speaking, the whites would number about 4000.

WILLIAM S. CLEAVER.

Kingston, Jamaica.

I send you a short catalogue of the cases dealt with at the hospital here, from which you will gather that appendicitis is not common. We have formed the opinion that race is not the factor to be considered, as the condition occurs among those who conform to the standard of European life, and is very rare among the natives who live a more or less primitive life.

J. A. ALLWOOD.

With regard to the *Southern States of America* Dr. Howard Kelly, in his work "The Vermiform Appendix," says:—

The negro race seems to be comparatively exempt from this affection. In order to obtain some information upon this point I wrote to several surgeons practising in Southern cities having a large proportion of negro inhabitants. The replies were unanimous in regard to the rarity of the disease in this race. ..... Dr. L. L. Hill, of Montgomery, Ala. (in the "black belt") with a coloured population of 9000, could collect the histories of only four cases that had occurred among them, and found that the physician who had been consultant for a number of years at Booker Washington's school, where there are about 1400 coloured students, did not remember ever to have seen a case there; at the Alabama Polytechnic Institute, however, 20 miles distant, where there are 400 boys, there has been an annual average of eight cases. At the former school the diet is simple and the same for all, but at the latter the cadets live at different boarding houses in the town.

There are 800 negro prisoners at one of the Alabama coal mines, and the physician in charge states that appendicitis is unknown among them. The explanation given for the relative exemption of the negro is that their diet is simple, they take a great deal of outdoor exercise, and they are free from digestive disturbances.

In order to learn whether prisoners in this country, living upon a simple diet and taking adequate out-of-door exercise, are subject to attacks of appendicitis, I wrote to the medical officer in charge of Portland Prison. Dr. Watson kindly furnished me with the following particulars:—

H.M. Prison, Portland.

During the past ten years one case of appendicitis is known to have occurred. I do not think a well-marked case of appendicitis could have escaped detection during this period. The average daily population during the year ending 31st March, 1913, was 696.

W. R. K. WATSON, Medical Officer.

Appendicitis in Animals.

From the prisoners in Portland Prison I went one step lower and wrote to Mr. Plimmer, asking whether appendicitis was met with among wild animals during their captivity in the Zoological Gardens. Mr. Plimmer very kindly looked up the records of the post-mortem examinations and wrote me as follows:—

Zoological Society of London, Regent's Park.

I have gone through the books myself, and enclose an accurate statement of appendicitis here. It is only in the higher apes that we can speak strictly of appendicitis, the other cases are inflammations of the end of the cæcum, which is often pointed, and of similar histological structure to the appendix in apes. H. G. PLIMMER, F.R.S.

(18 cases in 5 years, 1908–1912.)

Appendicitis proper:—Chimpanzee. Agile Gibbon. Horlock Gibbon.

Inflammations of Cæcum or Cæca in Animals not possessing an Appendix:—

Guerron	1	Wallaby	1
Lemur	2	Peccary	1
Suricate	1	Phalanger...	1
Wild cat	1	Marmoset...	1
Cavy	1	Hyena	1
Leopard	3	Snow leopard	1

The Influence of Diet and Other Factors.

Reviewing the facts I have collected I think it must be admitted they go a long way to prove that diet is a very important factor, probably *the* important factor, in the etiology of appendicitis. As this disease prevails amongst meat-eating nations it is further probable that the view of the late Dr. Williams is the correct one—namely, that the most important constituents in our food *predisposing* to appendicitis are the saturated fats, such as are contained in beef and mutton. Though it is true that man is an omnivorous animal, still some of us are possibly more allied to the herbivora than to the carnivora, both as regards idiosyncrasy of tissue and of temperament. However that may be, much of the evidence I have adduced, more especially the experience in appendicitis at the Booker Washington school and at the Alabama Institute, clearly indicates that a change from a simple to a more complicated diet is attended with grave dangers. What actual organism leads the attacking force I do not know, but the bacillus coli group are invariably in at the death.

Mr. Plimmer's observations at the London Zoological Gardens strike me as being a most valuable and interesting contribution to my inquiries, though it must be remembered that altogether, apart from the question of diet, these animals have their whole mode of life radically changed. It is impossible to learn whether wild animals living in their natural surroundings ever suffer from appendicitis, still it is reasonable to suppose they do not. However that may be, it is clear that animals in captivity, owing to the artificial conditions under which they live, do suffer and die from this disease. Those of us who have the privilege of living in large civilised communities, owing to the artificial conditions under which we live, are to a very great extent "animals in captivity," and we, too, suffer and die from this disease.

When we remember that modern social requirements demand that our food shall be such as may lead to an accumulation of calcium soaps in the wall of the vermiform appendix, thus seriously interfering with the circulation through its blood-vessels and impairing its glandular excretion, and further that this cæcal appendage is so placed as to have poured into it the most poisonous of the intestinal flora, the wonder is that any of us escape from attacks of appendicitis.

At the same time, there can be no doubt that, apart from the question of diet, other contributory causes have to be considered. We live in an age of luxury, and taking it all round the pace at which we live has increased greatly of recent years, and I believe the increased frequency of appendicitis and of other gastro-intestinal troubles is the consequence, for our intestinal tract is called upon to do work which is not congenial to it, and naturally rebels. Irregular meals, the "quick lunch," and imperfect teeth all play their part, and in spite of the blessings of golf the general want of physical exercise is very noticeable. For the most part we watch others play games. Nowadays a man has to be in so many different places at the same moment that he has not time to walk—he must be driven; and the motor has come to stay.

I believe the reasons I have mentioned account for the increased frequency with which appendicitis is met with, and the increased virulence of the poison is, I believe, due to the fact that our food is adulterated to an extent unheard of in days gone by. This is an age of patent foods, food preservatives, tinned meats, and frozen mutton, and from early infancy we have over-burdened our digestive tract with chemical and bacteriological poisons it is unable to cope with. All these things follow in the wake of civilisation and the geographical distribution of appendicitis can be determined with a fair degree of accuracy. With a map of the world before one, if a red cross is made in localities where

appendicitis prevails it will be seen that all the crosses are placed on civilised communities.

It really would appear that our gastro-intestinal arrangements are not at all suitable for twentieth-century requirements, and a vermiform appendix altogether out of date. As it is hopeless to expect the vermiform appendix to disappear in response to its altered environment, the only way to ensure intestinal peace, so far as it is concerned, is either to remove it during infancy, which would be quite wrong, or to alter very materially our habits of life, which would be quite right. Otherwise this worm-like remnant of a greater cæcum, destined to continue as a companion of the human race, will surely make its presence felt more frequently in the future than it has done in the past. It may even do so in that far, far distant future, "when some traveller from New Zealand shall, in the midst of a vast solitude, take his stand on a broken arch of London Bridge to sketch the ruins of St. Paul's."

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE CAUSATION OF STRICTURE FOLLOWING SUPRAPUBIC PROSTATECTOMY.

BY H. W. MILLS, M.R.C.S. ENG., L.R.C.P. LOND.

IT has been stated[1] by one of the greatest authorities on the subject that post-operative stricture does not occur after complete suprapubic prostatectomy, or, to be more technically exact, after subtotal suprapubic prostatectomy, for it is now universally recognised that the surgical capsule of the prostate itself consists of prostatic tissue.[2] Such a statement, although doubtless generally speaking correct, is too sweeping; there are exceptions, and these notes have been written to draw attention to the most frequent cause of such exceptions.

It is a well-known fact, a recognised surgical axiom, that if the mucous membrane be removed from any of the circular orifices of the body occlusion results, and this fact has been taken advantage of to base thereon, for example, Ochsner's operation for radical cure of femoral hernia. Now occasionally—rarely, it is admitted, but still occasionally—on sweeping the finger across the apex of the prostate in the final stage of its enucleation, the mucous membrane of the urethra carries away from a half to three-quarters of an inch anterior to the said apex, with the result that a portion of the membranous urethra is denuded of mucous membrane; unless this is noticed and special measures adopted to prevent such unfortunate results, occlusion of the urethra obtains, and the mucous membrane of the bladder heals completely and smoothly over the original site of the internal meatus.

CASE 1.—The patient was a man aged 67. Operation was performed on Sept. 17th, 1911; it was easy, enucleation lasting four minutes; practically no bleeding; two calculi, one very rough and tuberculated, about the size of marbles; bladder clean; skin wound healed by first intention; about an inch of mucous membrane came away anterior to the apex of the prostate. Sept. 29th: No urine passed per urethram; digital examination of interior of bladder revealed the fact that internal meatus was closed; No. 27 steel sound forced through on to finger; immediately thereafter urine was passed per urethram, and through and through irrigation was possible; sounds were passed daily thereafter, which caused some pain and bleeding for several days; subsequently Kollman's four-bladed prostatic dilator was used regularly, screwed up to 40, and ultimately complete recovery without any stricture occurred. The cure has been permanent.

CASE 2.—The patient, a man aged 73, was sent to me for operation. He had led a catheter life for many years—15 he stated; he denied any venereal history, but admitted alcoholic excesses for 30 years; he had a copious foul purulent urethral discharge, and a tight phimosis, the prepuce being greatly swollen and indurated—so much so as to suggest malignancy; he declined preparatory treatment, and insisted on immediate operation; this was accordingly performed on July 16th, 1910. The operation was simple and rapid, but about half an inch of mucous membrane carried away anterior to the apex of the prostate; recovery, except for threatened delirium tremens, was rapid. I was compelled to leave town two days after the operation and did not return until July 28th, on which day, finding that no urine had passed per urethram, and that through and through irrigation was impossible, as also was the passage of No. 27 steel sound, I made a digital examination of the interior of the bladder, and found that the mucous membrane had healed smoothly over the base of the bladder, and that no opening existed there. A sound was forced through on to the finger, and the opening kept patent daily with the Kollman dilator screwed up to 40. Circumcision had been done at the time of the prostatectomy, but the discharge still obtaining a microscopic examination of the latter was made which revealed gonococci. The explanation which followed revealed the fact that irregular coitus had obtained for two weeks before he came in to see me. This old man had been unfortunate enough to contract his first and only attack of gonorrhœa at the age of 73. An obstinate stricture resulted, requiring constant treatment for many months.

The treatment, of course, is to keep the parts well dilated, until such time as the raw surface is completely covered with mucous membrane, and for a considerable period thereafter insist on the periodical passage of large-size metal sounds; ultimately all is well, for the pathology of stricture, other than traumatic, presupposes the gradual cicatricial contraction of a ring of previously chronically inflamed extra-urethral connective tissue, which in these cases does not obtain.

Case 1 is now quite well with no stricture at all. Case 2 has a modified stricture, though not enough to trouble him; but here the Neisserian infection introduced the factor which is the usual pathological precursor to stricture, so that the present condition must not altogether be laid at the door of the accident, for the purpose of drawing attention to which these notes were written. 2·29 per cent. represents in my personal practice the frequency of this occurrence. I have also observed one

[1] Freyer: Enlargement of the Prostate, third edition, p. 77. "In not a single instance has there been any contraction to interfere with the free flow of urine."

[2] Wilson and McGrath: The Prostate Gland, Journal of the American Medical Association, vol. lvii., No. 29, p. 1601, quoting Tandler and Zuckerkandl: "The surgical capsule is composed of prostatic tissue."

instance of stricture in a case in which the urethra was so tough that I could not tear it through with my finger but was compelled to cut it with scissors; the prostate was of the hard scirrhous type.

San Bernardino, California, U.S.A.

THE USE OF LIQUID PARAFFIN IN ENTERIC FEVER WITH CONSTIPATION.

BY LLEWELLYN P. PHILLIPS, M.A., M.D.CANTAB., F.R.C.P.LOND., F.R.C.S.ENG.,

PROFESSOR OF MEDICINE IN THE EGYPTIAN GOVERNMENT MEDICAL SCHOOL, AND SENIOR PHYSICIAN TO KASR-EL-AINI HOSPITAL, CAIRO.

IN Egypt it is the exception to see cases of typhoid fever with diarrhœa. Constipation is the rule, and this constipation is often very difficult to manage. I used to treat it by daily enemata, preceded if necessary by a preliminary injection of olive oil; in most cases this was successful, but occasionally the result was not satisfactory. (The enemata are given out of a douche can.) During convalescence I used to commence treating constipation by using cascara and maltine as an aperient. On one occasion during an attack of typhoid fever with mania I had to give olive oil and castor oil in equal parts by mouth and the patient did well. I prefer, however, to leave such aperients alone during the acute stage.

In 1912 one of my patients was so constipated during the beginning of her convalescence that I resolved to use paraffin, and I did so with excellent effect; after that I commenced to use it throughout the illness, and such now is my routine. I have found that in cases in which during former acute illnesses enemata have acted with the greatest difficulty, paraffin, if an enema is necessary, acts easily and painlessly, and both my patients and the nurses have been more than satisfied with the result. It seems absolutely free from risk and, further, it probably acts as an emollient dressing to the typhoid ulcers. The only disadvantage I have seen from its use during typhoid fever has been a little occasional leakage per anum.

I give the drug in a dose of half an ounce at night and, if this be not sufficient, in a dose of half an ounce in the morning as well; it is best taken floated on the top of a little soda-water. With such dosage enemata are often unnecessary, though I still often order the bowel to be washed out so as to remove as much toxic material as possible.

Cairo.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on July 8th, Dr. Rigden, senior vice-president, being in the chair. Nine gentlemen were elected members of the society. The sum of £1890 was voted for the payment of the half-yearly grants to the widows and orphans. At the present time there are 45 widows and 13 orphans in receipt of grants. The invested funds of the society now amount to £139,500. Membership is open to any registered medical practitioner, who at the time of his election is resident within a 20-mile radius of Charing Cross. The annual subscription is 2 guineas. Special terms for life membership, which vary with the age of the member. Relief is only granted to the widows and orphans of deceased members. Since the last court five letters had been received from widows of medical men asking for relief, but this had to be refused as their husbands had not been members of the society. Further particulars and application forms for membership may be obtained from the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, W.

Rebiews and Notices of Books.

Tropical Diseases: A Manual of the Diseases of Warm Climates.

By Sir PATRICK MANSON, G.C.M.G., M.D., LL.D. Fifth edition. With 12 coloured and 4 black and white plates, and 239 figures in the text. London: Cassell and Co. 1914. Pp. 937. Price 12*s.* 6*d.* net.

SINCE the publication of the first edition of this manual by Sir Patrick Manson in 1898 it has held a foremost place among the text-books of tropical medicine. Although in the course of time the dimensions of the work have had to be increased to keep pace with the numerous discoveries and advances in our knowledge of the diseases of warm climates, it still retains to a large extent its original characters and its claim to give adequate information on the subject in a concise and handy form, so that the volume can be carried about by the practitioner in the tropics for consultation on his long journeys or on his tours of duty. Since the previous edition (the fourth) was issued in 1907 the etiology and pathology of a number of tropical diseases have undergone rapid development, such, for example, as kala-azar, trypanosomiasis, spirochætosis, and beri-beri, so that there was urgent need for the publication of the fifth edition of this book. The author, affectionately known to his former pupils and others as "the father of tropical medicine," has now left the fighting ranks of the profession, but has continued in his retirement to keep well in touch with the progress that is going on respecting the diagnosis, treatment, and prevention of the diseases of warm climates. The text in the fifth edition has been enlarged, extended, or revised throughout, while new plates and other illustrations have been added, but the general plan of the book remains the same. The author acknowledges his indebtedness to Dr. Philip Bahr for invaluable assistance in the preparation of this new edition, for rewriting the appendix on protozoa so as to bring it into conformity with the generally accepted teaching of the subject in this country, and lastly, for revising the nomenclature of the many parasites which form so important a feature of tropical pathology.

After an introduction which is concerned with the etiology of tropical diseases, the volume is divided into seven sections, dealing respectively with fevers, general diseases of undetermined nature, abdominal diseases, infective granulomatous diseases, animal parasites and associated diseases, skin diseases, and lastly, local diseases of uncertain nature. In the appendix are described some of the commoner parasitic protozoa of vertebrates and invertebrates, the classification adopted being for the most part that followed by Professor E. A. Minchin in his "Introduction to the Protozoa." The important section on fevers occupies nearly half of the whole book and comprises 24 chapters, nine of which are devoted to malaria in its various aspects. Some persons may question, perhaps, whether pellagra and heat-stroke should be classed among fevers, and whether pellagra at least should not be relegated to the section on general diseases of undetermined nature until its etiology has been worked out. The author himself says that the duration of pellagra is variable and that it may last from two to 15 years or more; in these circumstances it might be urged that this malady can scarcely be regarded

as a "fever" in the usual sense. In discussing the incidence of plague in England in recent years Sir Patrick Manson refers to the occurrence of some cases in 1910 accompanied by an epizootic among rodents in "Norfolk." He evidently intends to refer to the group of instances reported in the south-east of Suffolk in that year. In describing the mechanism of the transmission of plague by fleas reference is made to the "recent observations made by Dr. C. J. Martin," no mention being made of his collaborator Mr. A. W. Bacot, entomologist to the Lister Institute, who was responsible for a large share of the experimental work, the official report to the Plague Advisory Committee being entitled, "Observations on the Mechanism of the Transmission of Plague by Fleas, by A. W. Bacot and C. J. Martin." The claims of Dr. H. Seidelin to have discovered the specific parasite of yellow fever are rather curtly dismissed as not being supported by convincing experimental evidence. In the chapter on trypanosomiasis the statement is made that Professor M. Taute, the German sleeping sickness expert in East Africa, *infected* himself with 2 c.c. of blood from a trypanosome-infected dog, the trypanosomes being of the Rhodesian type, but there was no bad effect. We had been led to understand that Professor Taute's experiments on himself failed entirely, so it is perhaps incorrect to say that he "infected" himself. Perhaps "infected" himself should read "injected" himself.

There can be no question that this manual deserves the confidence of every student of tropical medicine and of every medical man practising his profession in the tropics. The advice given as to diagnosis and treatment has been carefully weighed beforehand, the great knowledge and ripe experience of Sir Patrick Manson enabling him to speak with undoubted authority on most of the diseases of warm climates. It gives us great pleasure to recommend this handy volume to the notice of all medical men and students interested in the subject of tropical medicine.

Principles of Surgery.

By W. A. BRYAN, A.M., M.D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. With original illustrations. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 677. Price 18*s.* net.

IN this work the author has put, in a concise and understandable form, the principles on which the practice of surgery is built. The book treats of surgical bacteriology, of the various infections, of wounds, and of hæmorrhage. It describes the general principles of fractures and dislocations and the various forms of tumours, but it does not enter into the questions connected with special fractures or the occurrence of new growths in any particular organs. This will serve to show the scope of the book, and we may say that it is evidently the work of one who has had much experience in teaching, and we can recommend it to students.

While we appreciate the excellencies of the book, there are some passages to which we must take exception. For instance, we find it stated that "the fact that the hair rapidly comes out in patches (alopecia areata) is very suspicious of syphilis," and "alopecia of the eyebrows is considered by high authority to be pathognomonic of syphilis." It is true that occasionally the loss of hair in syphilis may tend to be patchy, but it is certain that alopecia areata has absolutely nothing to do with syphilis. Alopecia of the eyebrows, also, is far more commonly seen in non-syphilitic cases than in those suffering from syphilis. Again, the author sometimes employs terms which are rarely used and therefore unknown to the average student; thus we find it stated that "enchondromata form in connexion with normal cartilage, especially in the larynx, the ribs of old people, and at the clivus Blumanbachii." We venture to say that 99 students out of 100 would not know what or where the clivus Blumanbachii is.

There are numerous illustrations, some of which are very good, but many show almost nothing, this being in part due to the use of half-tone plates. It is too often imagined that a photograph must show well the condition present, but many details are quite lost in a photograph and others disappear in the process of reproduction for printing. We may instance Fig. 23, which is described as an infected hand, but really it illustrates nothing. In Fig. 198, described as "a metastasis of carcinoma in axillary lymphnode," nothing characteristic is clearly to be seen, and we doubt if a student could learn anything from it. It would be far better if these photographs were redrawn for the purpose of reproduction.

Immunity: Methods of Diagnosis and Therapy and their Practical Application.

By Dr. JULIUS CITRON, Assistant at the University Clinic of Berlin, II. Medical Division. Translated from the German and edited by A. L. GARBAT, M.D., Assistant Pathologist and Adjunct Visiting Physician, German Hospital, New York. Second edition, revised and enlarged. London: J. and A. Churchill. 1914. Pp. 267. Price 14*s.* net.

JUST two years have elapsed since we reviewed the first edition of this American translation of Dr. Citron's work, and we are glad to see the appearance of a second with considerable additions to the subject matter. While the general scope of the work is not altered, chapters have been added on chemotherapy, on anaphylaxis, and on the serological reactions which have been described in relation with tumour formation. The first two chapters deal with the theory of immunity and with laboratory equipment. After these come two devoted to active immunisation, with a special account of aggressins; two on the use of tuberculin in diagnosis and treatment; and two on the relations of toxin and antitoxin. A few pages are devoted to the toxins derived from higher plants and from animals, such as snakes, toads, and so forth, and to ferments present in the blood. Then follow chapters on agglutination, precipitation, and bacteriolysis and hæmolysis. Complement fixation claims two chapters, while one each is devoted to phagocytosis, tumours, anaphylaxis, passive immunity, and chemotherapy. There is an adequate index of subjects and a second of the names of authors quoted, but as the references to the latter are not given the second index is not particularly useful.

The book is the work of an expert, and deals both with theory and with laboratory technique. It will not assist the practising physician in treatment of disease, but is rather designed to initiate the student and practitioner into the theories underlying the various laboratory tests to which so much importance is now assigned. For this purpose we can very highly recommend it. The translation has been considerably improved since we had occasion to point out certain peculiarities of diction in the first edition. We suggest, however,

that the two first letters of the word "aërobiosis" do not form a diphthong, and can therefore not be replaced by a single *e* ("erobiosis"), even on American principles.

A Text-book of Medical Entomology.

By Captain W. S. PATTON, I.M.S., and Captain F. W. CRAGG, I.M.S. Madras: The Christian Literature Society. 1914. Pp. 764. Price £1 1*s.*, or Rs.15.12.

THE title of this book is somewhat of a misnomer, as the authors themselves admit in the preface, for they describe it—and rightly—as "a guide to the study of the relations between arthropods and disease, rather than a text-book of entomology." The actual entomology consists only of the orders Rhynchota, Diptera, Siphonaptera, and Anoplura, because these subdivisions of the insect family alone are concerned with the propagation of disease; but the contents of the volume are increased by a consideration of the mites, ticks, and linguatulidæ, all of which arthropod groups are concerned with the transmission of various "fevers," and the crustacean cyclops belongs to the category by virtue of the fact that it harbours the larva of the guinea-worm, filaria or dracunculus medinensis.

The book is intended, as the first words of the preface denote, for medical and veterinary officers in the tropics; and for their sakes it is constructed as a treatise. In out-of-the-way places in Asia and Africa it is hardly necessary to state that the literature of this subject is not as a rule accessible. Hence the voluminous character of Captain Patton and Captain Cragg's work. All that is wanted must come under two covers for the great majority of those who are occupied with this department of medicine and biology and who find themselves away from civilisation. We do not think that the mode of treatment of the various groups of animals under review in this work is too lengthy, even though the result is somewhat cumbersome. To include after each section a list of the more important publications in journals and elsewhere argues, of course, the hope on the part of the authors that their handbook will prove as useful to those surrounded by libraries as to those scattered in desert places of the earth. And in so far as there does not appear to be any similar condensation of special knowledge this hope can be encouraged. But it is mainly addressed to men who will commence the study of the subject in the "field" with a groundwork of acquaintance with the more general facts of entomology derived from lectures and laboratory work at home. The book is not at all intended to embody an introduction to zoology in general and the history of the arthropods in particular. But given this quite elementary knowledge, the way into the further intricacies of the matter is well lighted up by our authors. Nor do they, as will sometimes happen, betray any favouritism for one or more groups, awarding other groups what the Germans term a "stepmotherly" treatment. Rigid impartiality reigns throughout. The reader will learn just as much of the Rhynchota as of the Siphonaptera. The illustrations, too, are as copious in one case as in another. The actual form of the illustrations is distasteful to us, consisting as it does of so much outline figure on plates, which is better rendered in the form of cuts. But the accuracy and intelligibility are to be praised.

In examining the work we have read with special attention the sections dealing with the two groups of insects just mentioned, which are important with us at home as well as in the tropics. With regard to the fleas (Siphonaptera) we note that the authors advise that all specimens should be sent to the Hon. Charles Rothschild, who is so well known for his careful study of these insects and for his large collections of the same. Here, as in the case of other groups, a very considerable list of memoirs, some of them from Mr. Rothschild's pen, is to be found at the end of Chapter V., which is concerned with these degraded diptera, as some zoologists think them. *The* flea, Pulex irritans, is singularly enough the only species of the genus Pulex to which, according to general opinion perhaps, all fleas belong. It is not confined to man; and, *per contra*, the cat and the dog flea occasionally occur on man. This both confirms and destroys current semi-scientific opinion on the matter. The multitude of species of flea is usually pointed out in works on the subject, but the impression sometimes left is that each of them is rigidly confined to its own pet host. Pulex, think our authors, is originally an Old World genus, but it has accompanied man on his travels, and is now, like man and very few other creatures, world-wide in range. Another very pestilent flea, the "jigger," is, on the other hand, a native of the New World, but has extended its range to Africa and the East. The rat is oppressed with no less than five species of flea—a fact of importance for the medical biologist in view of the transference of the plague by rats. The actual carrier of the germ has to be recognised among its fellow fleas.

We wish that we could commend the publishers' share in this volume as heartily as we do that of the authors. But it is not to be disguised that the appearance of the book is most unattractive and unwholesomely swollen. The two authors, we need scarcely point out, are already favourably known for their investigations into the structure of disease-carrying insects, and we have had many occasions lately of noticing their work in these columns.

A Text-book of General Embryology.

By WILLIAM E. KELLICOTT, Professor of Biology in Goucher College. London: Constable and Co., Limited. New York: Henry Holt and Co. 1914. Pp. 376 Price 10*s.* 6*d.* net.

ENTERTAINING the view that general embryology should occupy an important place in the collegiate study of biology, the author has published this book, which is the direct outgrowth of his own experience as a teacher of the subject, and its substance has, in fact, been in use as a text for several years. The facts of embryology lead directly to the great problems of the science of biology, and therefore the topics considered have been approached from the standpoint of their general biological relations. For those desiring a more elementary and brief course the parts in large type suffice. The small type also will be used by those pursuing a more elaborate course. The illustrations are particularly good, clear, and well selected. Most of them have been redrawn from the original sources. At the end of each chapter is a list of references to literature. We indicate the space occupied by the important sections to show the symmetrical planning of the work.

Ontogeny is first dealt with in about 30 pages. Embryology is defined as the science of the genesis of the adult organism. The various processes of reproduction are described and illustrated by numerous figures in the text, and the fundamental

character of the relation of embryology to the cell theory is emphasised. The author attempts to explain "how it all happens"—i.e., the transformations of substance, energy, and form. The Cell and Cell Division occupy about 50 pages, the cell in structure and action being the basis of modern embryology. More especially is the importance of polarity in germ cells dwelt on. The description of mitosis as it occurs in various classes of animals is particularly lucid and well worthy of perusal and study, for the mitotic figure is a mechanism effecting the equal distribution to the daughter cells of chromosomal division within the nucleus of the parent cell, so that each new cell has a complete group of chromosomes similar to those of the parent cell. Germ Cells and their Formation are the next subject, and are dealt with in over 40 pages. Lode computed that the total number of sperm formed in man may average about 340 billions, or approximately 850,000,000 sperm for each one of the 400 ova matured during the reproductive period of the female. On the other hand, the codfish is said to form 8,000,000 to 10,000,000 ova and a single species of sea urchin 20,000,000 ova in one season. The number of eggs is smallest where they develop within a brood cavity or where some parental care is exercised. Maturation is next discussed (30 pages) and then Fertilisation (54 pages). When fertilisation is internal the spermatozoa may remain alive and able to function for a very long time—e.g., in bats and snakes from autumn to the following spring, in snails for three years, and in bees for four or five years. Once within the ovum a "foreign" sperm seems to act almost as efficiently as the proper sperm in inaugurating development. The action of the spermatozoon is not specific. Human spermatozoa swim at the rate of 27 mm.—i.e., about 550 times their own length—in 7·5 minutes. At the corresponding rate of progression a man would walk a mile in 12·4 minutes. "Cleavage" (40 pages) is the second of the "grand periods" in individual history. In nearly all species the earliest cleavage planes are definitely related to the polar axis of the ovum. Differentiation, Heredity, and Sex Determination require about 60 pages, and form one of the author's most suggestive chapters, and he comes to the conclusion "that the chromosomes are to-day the determining factors in development and heredity." The final chapter (36 pages) deals with the Blastula, Gastrula, and Germ Layers.

Altogether the work is both lucid and suggestive, while it ranges over the whole sphere of general embryology in a manner which makes the study of so recondite a subject fascinating and attractive.

The Treatment of Diseases of the Digestive System.

By ROBERT SAUNDBY, M.D. Edin. Second edition. London: C. Griffin and Co. 1914. Pp. 179. Price 4*s.* net.

THE first edition of this excellent work, reviewed in THE LANCET of May 18th, 1907, was intended as a guide to the principles and practice of the treatment of diseases of the digestive organs, based on the author's personal experience. The second edition follows the same lines as the first; it has been brought up to date, revised, and enlarged by an appendix on dietetics.

Its first 50 pages consist of a general introduction to the subject, the methods of examining the patients, and general considerations about foods, drinks, and diets. Then follow five sections on diseases of the œsophagus, stomach, intestines, and rectum, and on the symptomatic disorders dependent upon gastro-intestinal troubles. In addition to the appendix already mentioned there is at the end of the book a brief list of prescriptions.

This thoroughly practical little volume may be warmly commended to the attention of all medical practitioners. It is written in a concise and straightforward style, and is clearly the fruit of a mature and extensive experience. Dr. Saundby shows great skill in his avoidance of the fads and far-fetched fancies, the *outré* diets and ultra-scientific treatments, that are sometimes imposed upon the well-to-do dyspeptic patient.

Diseases of the Rectum and Pelvic Colon.

By MARTIN L. BODKIN, M.D. New York, Rectal Surgeon, St. Mary's Hospital. Illustrations specially drawn by FRANCIS A. DECK. New York: E. B. Treat and Co. 1913. Pp. 416.

THIS is a convenient guide to the diseases of the rectum in a form likely to prove useful to the general practitioner who looks for assistance in the treatment of a rectal case. It begins with a chapter on the anatomy and physiology of the rectum and of the pelvic colon. An account of the methods of examining a patient follows, and then come chapters on diagnosis and on the symptoms usually associated with disease of the rectum. The various affections of the rectum are described in turn, special stress being laid on those rectal affections that are suited for treatment by medical men in general practice. The treatment of the more serious diseases, such as cancer, is described, but not so fully.

On the whole, we may express a very favourable opinion of this little book. It is clearly written and illustrated by plates which show what they are intended to show. It is only natural that the author should approve of those operations which he himself employs, but the terms in which he condemns the crushing operation for hæmorrhoids suggest that this is a method which he can hardly have personally used. He says "the operation is only applicable to cases one would select as favourable for the injection method." The method can be used with perfect success in any case of hæmorrhoids, as those know who employ it. The author appears to prefer the clamp and cautery operation, which is also an excellent method.

Sanitation in India.

By J. A. TURNER, M.D., D.P.H., Executive Health Officer, Bombay Municipality. With contributions by B. K. GOLDSMITH, M.B., D.P.H.; S. C. HORMUSJI, M.D., D.P.H.; K. B. SHROFF, I.M. & S., D.P.H., D.T.M.; and L. GODINHO, M.D., D.P.H. Bombay: Times of India Press. 1914. Pp. 1014.

IN this volume, dedicated to the municipal corporation of the City of Bombay, is contained the matter of the courses of lectures and demonstrations given to the students of the sanitary surveyors' class by the public health officers of the city, elaborated so as to form a handy and practical guide to sanitation in India. The first chapter deals with the administration of the Public Health Acts, which are based on the English Public Health Act of 1875, and are carried out by the executive officer (who may be municipal commissioner, chief municipal officer, or collector), taking the place of the sanitary authority in England. The public health administration of Bombay City is naturally taken as an example of the application of modern sanitary methods in India, and

their practical working is described in detail, with a summary of the by-laws now in force, including also the sanitary administration of the port. This section will be of great value to all concerned with the sanitary supervision of a large city or port in a tropical climate in any part of the world.

The collection, removal, and disposal of town refuse are next dealt with; in addition to describing the procedure in London, the details of practice in Bombay, Calcutta, and Madras are furnished. The subject which follows—the collection, removal, and disposal of sewage—is of the greatest importance in a tropical city, and also one of the greatest difficulty. The system at work in Bombay is described in detail and with illustrations; there is also some account of the various dry methods of disposal in use in the country districts and cantonments, though not so fully detailed a description as might have been given. The Shone and Liernur methods of pneumatic removal are mentioned, but not fully described, though the installation of the former system at Rangoon is, we believe, the most complete and extensive in the world. Water and its supply is considered in the fourth chapter. It may be doubted whether the bacteriological details given would be of use to the readers for whom this manual has been compiled; and the arrangement of this chapter cannot be said to be satisfactory. In the next section, on food and milk, we find a description of the parasites in water, which would surely be better placed in Chapter IV. The chapter on infectious diseases and their prevention contains much valuable material, though the information is not always given in an assimilable form, and it is odd to find Bristowe referred to (p. 524) as "a recent writer," under the heading of typhus fever. J. S. Bristowe's treatise on medicine was published in 1876. On the other hand, in a book published in 1914, referring to Indian public health, we think something more should have been said about the causation of beri-beri than that "several theories have been put forward, the most favoured being that of uncured rice; possibly some micro-organism in certain forms of food producing a toxin." There is a full description of plague and the procedure necessary for its prevention; and the chapter on malaria is very complete and well illustrated.

There is a great deal of information in this volume, but the method of presentation does not always do justice to the subjects. It would have been more useful if it had been provided with an index.

LIBRARY TABLE.

The Fundamental Basis of Nutrition. By GRAHAM LUSK, Professor of Physiology, Cornell University. London: Humphrey Milford, Yale University Press. 1914. Pp. 62. Price 2*s.* 6*d.* net.—Patients and laymen often ask for simple books on the theory of diet, and to such inquirers this brochure can be entirely recommended. The position and reputation of Professor Lusk are sufficient guarantee of the scientific accuracy and value of the matter presented, though the presentation is so simple that everyone can follow it. After a short historical survey the reader is introduced to the theory of calories, and proper stress is laid upon the necessity for comprehending the measurement of heat production as a standard of the value of foods. Persons who cannot realise the importance of a knowledge of calories "must be reasoned with and persuaded to listen." They cannot do better than begin with these lectures. From the question of the need of "fuel," heat-producing foods, the author passes to the comparison of various forms of proteins, showing the unquestionable superiority of the proteins of meat, fish, eggs, and milk over those of wheat, beans, or maize; the proteins of rice and potatoes hold an intermediate position. We have given here an excellent account of the varied proteins of the commoner cereals—wheat glutinin, gliadin (the alcohol-soluble protein of wheat), edestin of hemp, and other bodies—which have been laboriously prepared by Osborne and Mendel in the United States. After a brief glance at the habits of different populations in the matter of diet, the writer passes to the important subject of vitamines, upon which much work has probably yet to be done. The initial researches into their nature arose from inquiries into the causation of beri-beri, and are excellently sketched here. The closing chapter is a very practical review of the monetary value of foods, in which a proper tribute is made to the valuable contribution to this subject afforded by Miss Dorothy Lindsay, under the direction of Dr. Noel Paton. A very wide investigation has recently been made by Dr. F. C. Gephart, of the Russell Sage Institute, who obtained his material from the ordinary meals of the "Child's Restaurants," establishments well known throughout America for the high quality of their food material and the moderate scale of their charges.

The Purpose of Education: An Examination of the Education Problem in the Light of Recent Psychological Research. By ST. GEORGE LANE FOX PITT. Cambridge: University Press. 1913. Pp. 83. Price 2*s.* 6*d.* net.—The author has written a little book on the application of certain findings of experimental psychology to the elucidation of educational problems in the hope of clearing up some prevailing confusions and difficulties. He believes that we err either on the side of making exaggerated claims for the importance of the "inner life," or on the side of assigning too much to the effect of "environment." In the pursuance of a middle path lies our best hope for the future of the race. As far as the former is concerned, the author holds that the strength and worth of our personality are determined by the quality, nobility, and coördination of the "complexes" of which it is composed. Complexes are ever in a state of flux, ever changing and developing, adapting themselves to, or assimilating themselves with, their environment. Hence the right way to awaken or develop character is by the harmonious interaction of varying complexes with chosen or accidental environments. An individual's likes and dislikes, tastes and preferences, can be cultivated, repressed, or developed, and in the subordination of the lower to the higher lies the true goal of systematic education. It is a fallacy to imagine that mental disposition and environment are mutually independent; to attain the ideal state of perfect interaction instincts must be rationalised, not ignored. To use a Freudian expression, they must be sublimated, not denied. The book commends itself to the thoughtful reader and to the teacher who wishes to be more cognisant of the psychical processes involved in the art of pedagogy.

Diabetes: Its Nature and Treatment. What Diabetics Ought to Know. By the Hon. Dr. T. M. NAIR, M.D. Madras: Higginbothams, Limited. 1914. Pp. 147. Price 6*s.* 6*d.* net.—The author, an Indian, and an M.D. of Edinburgh, in the preface expresses the hope that his small book "will be of

some little use in enabling the public to understand what has already been established, and to estimate what there is yet to be disclosed." On glancing it through to appraise its fitness as an enlightener of the public in those things that a patient ought to know, the first thing that struck us was two or three pages of graphic chemical formulæ illustrative of the difference between normal katabolism and its perversion in the production of acetone. The natural inference was that this was a specimen of the quasi-learned book making an *ad captandum* appeal to the public. Extended perusal, however, showed it to be really a conscientious and careful summary of present knowledge and theories in regard to diabetes in almost all its relations. A book whose author closes by describing it as a "short account of a disease whose etiology we do not know and for which we have no effective treatment" seems hardly ascribable to unprofessional motives. The frequency of diabetes in India gives point to the statement in the introduction that "an organised research into the etiology and pathology of diabetes ought to be conducted in India very much like cancer research or the campaign against tuberculosis in England." The book is written in excellent English and shows a discriminating study of a wide field of modern medical literature. We should prefer to describe it as indicating much that the diabetic's medical attendant, rather than himself, ought to know.

Nouveau Traité de Chirurgie. Publié sous la direction de A. LE DENTU et PIERRE DELBET. *Maladies de la Mamelle.* Par AMÉDÉE BAUMGARTNER, Chirurgien des Hôpitaux de Paris. Avec 56 figures dans le texte. Paris: J. B. Baillière et Fils. Pp. 339. Price, paper, 6 francs; boards, 7.50 francs. —In this volume of Le Dentu and Delbet's elaborate treatise on surgery Dr. Baumgartner has succeeded in putting into a comparatively small volume all the essential facts connected with the breast. The difficult subject of the classification of the tumours of the breast has been treated in a very satisfactory manner. Especially good is the account of the operative treatment of cancer of the breast. The illustrations are numerous, and altogether the work is of the high standard of the other treatises contained in this excellent system of surgery.

MISCELLANEOUS VOLUMES.

IN *The Struggle for Scutari* (*Turk, Slav, and Albanian*), by M. EDITH DURHAM (Illustrated by photographs and sketches by the Author. London: Edward Arnold. 1914. Pp. 320. Price 14*s.* net), is presented a stirring account of the events of 1911–13 in Albania, as seen by one familiar with the country and people who had special opportunities for seeing and a capacity for appreciating the complexity of the problems involved. It is not a cheerful story by any means, with its recital of atrocities and duplicities, disgraceful alike to Christianity and civilisation, but practised apparently by all sides indiscriminately during the rising against Turkey, and the contests between the different subject races that shook off her yoke. The authoress herself felt that, in carrying out her work of relief to the sick and wounded and enabling them to return to the front, she was "not only prolonging the war, but aiding and abetting every kind of atrocity," and that she ought not to do so. Particular instances are given of Montenegrin and Servian barbarities which may rank with the "Turkish atrocities" that have long been considered by many English people to be characteristic of the Moslem. The author's conclusion is that no permanent solution of the Balkan question has been arrived at. "The ethnographical questions have been ignored. ..... The seeds have been sown of hatreds that will grow and bear fruit." There are many illustrations from the author's photographs and sketches.

Dr. A. R. Neligan is physician to H.M. Legation at Teheran, and has resided for some years in the country, so he writes with knowledge in his *Hints for Residents and Travellers in Persia* (London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 195. Price 5*s.* net.) Persia is somewhat of a *terra incognita* to most Britons, and Dr. Neligan's little book contains much useful information as to life and how to live in a country which is of interest in many ways. Persia is mainly a great elevated plateau, a certain amount of which is desert, but most of which (if irrigated) is extremely fertile, while the climate is very pleasant. True, the winters are severe and the summers hot, but the air is so dry that the heat is quite bearable. This, however, is not the case in the Caspian provinces and in the districts around the Gulf, where heat and humidity are combined. Dr. Neligan's hints and instructions as to food, housing, hygiene, and other matters are straightforward and sound, though on one or two points other observers may differ from him. First, as to food. In some parts of Persia, surely, food is good both in quality and variety. True, there is no beef, but always excellent mutton; about 12 different kinds of *pilaf*, almost all good; and vegetables in abundance. Fruit in the Urmi Plain, at any rate, is magnificent, and the chickens, even the post-house breed, are quite worth eating. Secondly, Dr. Neligan says that in his experience Persia is singularly free from fleas. The reviewer did not find it so. He remembers camping for the night about half-way between Urmi and Khoi, at a place where there were no houses but a ruined stone hut, and the ground simply shimmered with fleas. Persia is a delightful country in which to travel or reside, and for those who can appreciate colour in landscape we can imagine no more fascinating place. Dr. Neligan supplements his writings on Persia with instructions as to how to get there, but has omitted to give the route *viâ* Vladikafkas, the Dariel Pass, and Tiflis. If more expensive than some others, the magnificence of the scenery makes it quite worth while taking. This is a very interesting book.

It is fitting that a notice of a work on *Travel and Politics in Armenia*, by NOEL BUXTON, M.P., and the Rev. HAROLD BUXTON, with an introduction by Viscount BRYCE and a contribution on Armenian History and Culture by ARAM RAFFI (London: Smith Elder and Co. 1914. Pp. 274. Price 5*s.* net), should follow that dealing with travel and residence in Persia, for Persia and Armenia touch one another both geographically and in many ways politically. The greater part of the work deals with politics, and on this part of the book we can say nothing. But we can cordially recommend the book to all those who desire to know something of an ancient people with a most interesting history, while apart from the Armenians the description given of the Kurdish tribes is sympathetic and lifelike. We are glad to see that the authors highly appreciate the Armenian Liturgy, for to our minds it is singularly beautiful and only excelled among Eastern Liturgies by that of Malabar and among Western by the Mozarabic rite.

Lourdès, by JOHANNES JÖRGENSEN, translated from the original Danish by INGEBORG LUND (London: Longmans, Green, and Co. 1914. Pp. 195. Price 2*s.* 6*d.* net). There is less disposition in these days than formerly to deny the reality of the cures at times effected under the influence of strong emotion, religious or otherwise. The tendency of others than those whose religious principles, of whatever kind, are involved is rather to explain them as being due to subjective suggestive influence. In this book a sympathetic attempt is made to present a picture of one of the pilgrimages to Lourdes. The history of the shrine is recounted and the spectacle afforded by the pilgrimage is somewhat flamboyantly described, but when we come to look for happenings we are told only of a paralytic who became able to move her hand, a blind person who insisted that she had received her sight, but concerning whom the verdict of Dr. Boissarie, director of the Bureau des Constatations Médicales, was "Quite destroyed; impossible to see with those eyes"; and two cases of gastric ulcer in which at least a symptomatic cure apparently must be admitted. For the rest, recourse is had to the case-books of the Bureau des Constatations, from which are cited several cases, one of whom, Augusta de Muynck, was present to show that a cure effected during 1908 in 24 hours of a freely discharging abdominal fistula left after three laparotomies had been maintained. The descriptions of the cases generally are too diffuse and lacking in precision and the necessary knowledge of the relative importance of medical factors to be of much assistance to the inquiring medical

man. The descriptive portion of the book, particularly the story of Bernadette Soubirous, by whose "vision" the grotto was made known, is readable enough.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVIII., Nos. 2 and 3. May, 1914. Cambridge University Press. Price 7*s.* 6*d.*—Further Observations on the Constricting Action of Adrenalin on the Cerebral Vessels, by Carl J. Wiggers. Adrenalin was perfused through the brains of animals removed from the skull after the manner described by Dixon and Halliburton. In all 13 experiments were made, and in eight of these adrenalin caused constriction of the cerebral vessels.—The Influence of Carbohydrate and Fat on Protein Metabolism: III., The Effect of Sodium Selenite, by E. P. Cathcart and J. B. Orr. The toxic effects of selenium have long been known. The authors' experiments were made on an Airdale bitch, weight 12 kilos. Throughout the series of experiments the protein content of the food was little altered, but the amount of carbohydrate was varied from 33 to 204 grammes per diem, while the fat content was varied inversely to maintain an approximate constant calorie value for the diet.; sodium, 2 grammes per diem, was added to each diet. The methods used for estimating the urinary constituents are given in the text. The injection subcutaneously of a sublethal dose of sodium selenite produces salivation, vomiting, anorexia, and lethargy. The total N and urea outputs are raised as a result of the injection, a result most marked in experiments with carbohydrate-poor diets. There is no marked acidosis following the injection, as estimated by the output of ammonia, acetone, and aceto-acetic acid. After injection there is an immediate rise in the output of creatinin, with possibly a subsequent fall below normal. There is also a definite rise in the creatin output which cannot be explained by the presence of aceto-acetic acid. The output of creatin varies inversely with the amount of carbohydrate in the food. Generally it may be said that the toxic effect of the selenite was most marked when the diet was poor in carbohydrate.—The Cerebro-spinal Fluid: II., Cerebro spinal Pressure (C.S.), by W. E. Dixon and W. D. Halliburton. The C.S. pressure has been frequently measured previously, and is found to vary within considerable limits (40–72–200 mm. of water). It varies with the respiratory movements, with arterial blood pressure, with ether anæsthesia, with strychnine, and with many other factors The authors measured the C.S. pressure by connecting a cannula inserted into the subcerebellar cisterna with a manometer containing salt solution. The movements were recorded by means of a Marey's tambour. The animals experimented on were dogs anæsthetised with morphine and urethane. Cerebral venous pressures were also recorded. Experiments were also made on the dead animal (killed by chloroform, hydrocyanic acid, or asphyxia), artificial respiration being kept up after death. The cerebral venous and C.S. pressures may or may not approximate to one another according to certain conditions, and the same rule holds true during life. The effects of changes in arterial pressure—e.g., hæmorrhage compressing blood-vessels, clamping both carotid arteries, stimulation of the vagus and sympathetic nerves—were studied, as were the effects of the C.S. pressure on cerebral venous pressure and *vice versa*. Next, the effects of substances that increase the cerebro-spinal secretion—choroid extract (intravenous injection), chloroform, and carbonic acid gas (inhalation)—were studied. The authors conclude that the C.S. pressure is an independent pressure, and that the factors determining its height are dependent on the rate of secretion and the rate of absorption of the fluid—i.e., it is an independent secretory pressure, although it may be influenced passively by circulatory changes. The effects of adrenalin, amyl nitrite, and pilocarpine were also studied. It has been generally held that the brain being incompressible the total blood content is almost constant (Monro-Kellie doctrine). The authors come to the conclusion that the cranial contents cannot any longer be regarded as a fixed quantity without the power of expanding or contracting in volume. The C.S. pressure is influenced passively to a small extent by changes in the arterial and venous pressures, but such alterations are insignificant compared with the independent changes in pressure which occur as the result of secretory activity. Of all the conditions which influence the C.S. secretion the authors attach the most importance to deficiency of oxygen or excess of carbon dioxide in the blood.—Vaso-motor Nerves in the Lungs, by Enid M. Tribe. A considerable number of investigations have already been made on this subject since 1894. The method used consisted in artificial perfusion of the lung *in situ* with the defibrinated blood of the animal, the circulation being maintained by means of a small pump and glass valves, the animal itself (usually a cat) being immersed in a bath of 0·9 per cent. saline at 37° C. Various preparations of "adrenalin" were added to the blood in varying proportions. It was found that all preparations of adrenalin in amounts not less than 0·01 mgm., under normal conditions of pressure and temperature, produce constriction of the pulmonary vessels of dogs, cats, rabbits, guinea-pigs, and ferrets. The constriction is followed by a dilatation, best marked in cats. The minimum amount of adrenalin capable of producing constriction is 0·01 mgm., but dilatation is obtained with only 0·00002 mgm. The effects are due to action on the smaller arteries and arterioles, not merely on the pulmonary artery itself. Stimulation of the stellate ganglion produces slight motor effects. After ergotoxin the constrictor effect of adrenalin is lost, only dilatation being produced. It is concluded that the constriction is due to vaso-constrictor nerves of sympathetic origin.—On the Effects of Complete and Incomplete Castration upon Horn Growth, by F. H. A. Marshall and J. Hammond. The effects of removing in Hardwick sheep the testes, but retaining the epididymis, were studied. The authors' results clearly support the view that the testes elaborate one or more hormones which either directly or indirectly act as a stimulus to the tissues from which the horns develop.—The Carbon Dioxide Production of Heat Rigor in Muscle and the Theory of Intramolecular Oxygen, by W. M. Fletcher and G. M. Brown. This is a very important paper, as it practically disposes of the views of muscle physiology commonly associated with the names of L. Hermann ("inogen theory") and Pflüger ("intramolecular theory"). To grasp the importance of the question the whole paper with its critical discussions should be read. The CO_2 discharge of heat rigor—the discharge at temperatures between 40° and 100° C., and from heated muscle after survival in or without oxygen, after chloroform rigor, and after the addition of acid, were studied. The summary of the authors' conclusions occupies a page and a half. All the experiments point to the conclusion that in the muscle the respiratory oxidation process yielding CO_2 as an immediate product has its chief end in the supply of energy for replacing the lactic acid in the molecular position from which stimulation of same kind has displaced it, and there appears to be no reason at present for supposing that the material which is oxidised in the respiratory process is the same as, or related to, the material from which lactic acid appears, and into which, as it seems, it may again disappear.—Observations on Decerebrate Rigidity, by Lewis H. Weed. Decerebrate rigidity manifests itself as a prolonged enduring contraction of the extensor muscles. Experiments were made on about 50 cats. The effects of various cerebellar ablations on the rigidity, the pathway in the cerebellar peduncles, the mesencephalic reactions, and the inhibitory pathway were investigated. The author concludes that (1) the main reflex centre, and in that sense the source of decerebrate rigidity, lies in the mid-brain, and is probably the nucleus ruber; (2) the cerebellum forms a very important, if not absolutely essential, pathway for the afferent impulses from the limbs and trunk concerned in decerebrate rigidity; (3) the cerebellum forms an essential link in the inhibitory pathway from the cerebral cortex; and (4) the localisations of the cerebellum, as far as can be ascertained from study of the rigidities in various extremities, are not sharply circumscribed or very minutely differentiated.—Is Polished Rice plus Vitamine a Complete Food? by CASIMIR FUNK. Experiments were made on pigeons fed on "synthetical diet," and others on polished rice, and they all manifested typical beri-beri symptoms. Injections of the "vitamine-fraction" caused complete recovery. From these and other experiments the author concludes that polished rice and vitamine constitute a complete food, and that there is no justification at present to accept the necessity of two different vitamines, one for curing the nervous symptoms and one for the maintenance of body weight.

THE PREVENTION OF INSANITY.

ON July 16th a deputation waited upon Mr. Herbert Samuel, President of the Local Government Board, to advocate the provision of greater facilities for the non-compulsory treatment of early and uncertifiable mental cases. The following composed the deputation:—Sir John Jardine, M.P., Dr. Christopher Addison, M.P., Dr. W. A. Chapple, M.P., Mr. Percy Alden, M.P., Mr. J. W. Hills, M.P., Sir Henry Craik, M.P., Mr. T. E. Harvey, M.P., Sir Rickman Godlee, Dr. F. W. Mott, Dr. Howard Tooth, Dr. H. Sainsbury, Dr. Ivo Geikie Cobb, and Dr. S. E. White (honorary secretary). Lord Robert Cecil, M.P., had intended to be present, but was detained elsewhere, while Sir Francis Champneys, Sir Wilmot Herringham, and Dr. Grainger Stewart wrote expressing regret at being unable to attend.

Sir JOHN JARDINE, in introducing the deputation, read the following recommendation which has been widely signed by leading medical practitioners, and by 330 Members of Parliament of all shades of political opinion:—

"We, the undersigned, desire to advocate the provision of greater facilities for the treatment of incipient mental cases without certification. The strong popular prejudice, the loss of liberty, and the atmosphere of certified asylums combine to deter patients and their friends from seeking early and efficient treatment. We consequently recommend that certification should be restricted to those cases in which, from the serious nature of the malady, it has become necessary, and that incipient cases should have more opportunity of temporary preventive treatment in reception homes, observation wards of Poor-law infirmaries, or the wards of general or special hospitals."

The medical signatories to this recommendation are as follows:—

London: Dr. Edwin Ash, Miss L. B. Aldrich-Blake, M.S., Miss L. Garrett Anderson, Sir Thomas Barlow, Sir John Rose Bradford, Sir John Broadbent, Mr. C. A. Ballance, Mr. A. Boyce Barrow, Dr. S. H. Belfrage, Mr. Stanley Boyd, Miss A. Helen Boyle, Dr. E. Honor Bone, Dr. W. P. S. Branson, Dr. J. Mitchell Bruce, Dr. E. Farquhar Buzzard, Sir Francis Champneys, Sir W. J. Collins, Sir John Collie, Mr. James Cantlie, Dr. J. Walter Carr, Dr. Harry Campbell, Dr. J. Stansfield Collier, Dr. W. S. Colman, Dr. Dorothea Colman, Dr. F. William Cock, Dr. Ivo Geikie Cobb, Dr. E. Davies Colley, Dr. Maud M. Chadburn, Dr. James Calvert, Mr. H. Work Dodd, Dr. T. R. Elliott, Mr. Wilimott Evans, Miss Frances Ede, Sir David Ferrier, Dr. H. Morley Fletcher, Mr. Percy Flemming, Dr. Emily E. Flemming, Dr. R. Hingston Fox, Dr. Selina Fox, Sir Rickman Godlee, Sir Alfred Pearce Gould, Miss E. Grace Garratt, Dr. Leonard Guthrie, Dr. Henry Head, Sir Victor Horsley, Professor W. D. Halliburton, Sir W. P. Herringham, Dr. George Johnston, Dr. H. Macnaughton-Jones, Dr. M. Sophia Jevons, Dr. W. Douglas Kirkwood, Miss Gertrude Keith, Mr. J. B. Lawford, Dr. Constance E. Long, Dr. Octavia Lewin, Dr. F. W. Mott, Dr. Sidney Martin, Sir Malcolm Morris, Dr. E. D. Macnamara, Dr. James Mackenzie, Dr. Hector Mackenzie, Dr. Isabella Macdonald, Dr. R. O. Moon, Dr. Hector Munro, Dr. J. B. Muirhead, Dr. C. M. Murrell, Dr. George Ogilvie, Dr. J. A. Ormerod, Dr. Frederick S. Palmer, Mr. J. Herbert Parsons, Dr. Arthur G. Phear, Dr. Winifred S. Patch, Dr. Henry Rayner, Dr. J. S. Risien Russell, Dr. Amand Routh, Sir George H. Savage, Dr. Mary Scharlieb, Dr. G. E. Shuttleworth, Dr. Agnes Savill, Dr. Harrington Sainsbury, Dr. Amy Sheppard, Dr. T. Grainger Stewart, Dr. Mary C. Scott, Dr. Purves Stewart, Sir John Tweedy, Dr. James Taylor, Dr. Frederick Taylor, Dr. Howard H. Tooth, Dr. W. Aldren Turner, Dr. Rose Turner, Dr. A. Campbell Thomson, Miss May Thorne, Dr. Samuel West, Professor A. D. Waller, Dr. Florence E. Willey, Dr. Hugh Wingfield, Dr. Jane Walker, Dr. Helen Webb, Dr. L. Woodcock, and Dr. A. Davis Waite.

Birmingham.—Mr. Gilbert Barling, Mr. Seymour Barling, Dr. Stanley Barnes, Mr. Frank Barnes, Mr. W. Billington, Dr. Guy J. Branson, Dr. H. Langley Brown, Dr. Violet A. Penrose Coghill, Mr. Alfred Paget Evans, Dr. Frederick Edge, Dr. J. G. Emanuel, Mr. J. Jameson Evans, Dr. F. W. Foxcroft, Dr. W. Pemberton Fooks, Dr. W. B. Featherstone, Mr. W. F. Haslam, Mr. George Heaton, Dr. R. Beatson Hird, Mr. A. E. W. Hird, Dr. John T. Hewetson, Mr. J. Fourneaux Jordan, Mr. F. Emrys Jones, Dr. O. T. Kauffmann, Dr. William Lamb, Mr. Albert Lucas, Dr. Edward Malins, Mr. Christopher Martin, Mr. F. Marsh, Mr. J. T. J. Morrison, Mr. G. Percival Mills, Dr. W. J. McCardie, Dr. Caroline E. O'Connor, Dr. Leonard G. Parsons, Dr. C. E. Purslow, Dr. W. A. Potts, Dr. James W. Russell, Dr. John Robertson, Sir Robert M. Simon, Dr. Robert Saundby, Dr. C. W. Suckling, Dr. J. Douglas Stanley, Dr. James E. H. Sawyer, Dr. Mary D. Sturge, Dr. Peter Thompson, Dr. Thomas Wilson, Mr. Beckwith Whitehouse, Dr. E. Wood White, Dr. Beatrice Webb, and Dr. William H. Wynn.

Liverpool.—Dr. John Hill Abram, Sir James Barr, Dr. Thomas R. Bradshaw, Mr. H. Briggs, Dr. Robert J. Buchanan, Mr. Thomas H. Bickerton, Dr. J. M. Beattie, Dr. Richard Caton, Dr. T. B. Grimsdale, Dr. A. Gordon Gullan, Mr. Damer Harrisson, Dr. John Hay, Miss Frances Ivens, M.S., Dr. Charles McAlister, Dr. J. C. McDougall, Dr. Benjamin Moore, Mr. R. W. Murray, Mr. Rushton Parker, Dr. W. Permewan, Mr. Frank T. Paul, Dr. Nathan Raw, Mr. Charles H. B. Shears, Dr. G. Stopford Taylor, Dr. W. B. Warrington, Dr. J. Hayward Willett, and Dr. Courtenay Yorke.

Manchester.—Dr. Judson Bury, Dr. J. Grey Clegg, Dr. Catherine Chisholm, Dr. J. R. Carver, Dr. H. Cully, Dr. Archibald Donald, Professor Sheridan Delépine, Dr. A. Hill Griffiths, Dr. A. Emrys-Jones, Dr. C. Paget Lapage, Dr. Charles H. Melland, Dr. F. Craven Moore, Sir William Milligan, Dr. Ernest S. Reynolds, Dr. S. M. Ross, Dr. Arthur Sellers, Dr. W. Fletcher Shaw, Dr. E. J. Sidebotham, Mr. W. Thorburn, Mr. F. H. Westmacott, Dr. Robert B. Wild, Mr. Philip R. Wrigley and Mr. Garnett Wright.

Leeds.—Dr. Alfred G. Barrs, Mr. L. R. Braithwaite, Dr. de Burgh Birch, Mr. Edward W. Bain, Dr. T. Churton, Professor Cameron, Mr. Harold Collinson, Dr. E. O. Croft, Mr. J. A. Coupland, Mr. J. F. Dobson, Mr. T. W. Daw, Dr. T. Wardrop Griffith, Dr. John B. Hellier, Dr. J. K. Jamieson, Mr. R. Lawford Knaggs, Dr. Carlton Oldfield, Dr. M. Phillips, Dr. Henry S. Raper, Mr. E. Robinson, Dr. W. H. Maxwell Telling, Dr. Rawdon A. Veale, Dr. C. Wilfred Vining, Dr. George W. Watson, Mr. Henry Secker Walker, Dr. A. L. Whitehead, and Dr. W. McGregor Young.

Sir JOHN JARDINE said that the view of the committee which he represented was embodied in the following memorial:—

We respectfully urge that the Local Government Board should, with a view to the prevention of insanity, enable and encourage county and borough councils and other local authorities to supply or aid the supply of homes intended for the treatment of early and uncertifiable mental cases at the period when they can most easily be cured, such institutions to be subject to the approval of the Local Government Board. That patients (if suitable) should enter such homes as they would enter a hospital—i.e., on an absolutely voluntary footing, and without certification, authorisation, or compulsion. They should be controlled during their stay by the rules of the institution, but be free to leave it after giving a specified notice. Unless urgency demands certification and immediate removal to an asylum, no patient who has entered shall be certified except by independent doctors after his departure from the institution. Private patients would pay on terms similar to what they now pay in county asylums. Pauper patients of the class who are now received for observation in Poor-law infirmaries, and who are found not to be certifiable, should receive treatment appropriate to their case. Both private and pauper patients should be dealt with on modern hospital lines.

No change is proposed in the lunacy laws or in their administration.

The object of the treatment here recommended is to prevent people becoming certifiable. It is particularly desirable that these institutions should not be regarded as "half-way houses" to asylums. With a view to encouraging the public to come to them for the early treatment which is so necessary as a preventive of insanity, it is essential that the institutions here proposed *should be kept wholly outside the jurisdiction of the Board of Control.* The patients contemplated are not in any sense "mentally deficient," neither have they been certified as "of unsound mind." Hence the Board of Control, whose function it is to deal with people belonging to the aforesaid two classes, is not concerned with individuals such as are here described *previous to certification.*

We would also respectfully urge that the Local Government Board, as the authority concerned with public health, has an interest in encouraging the prevention of all forms of illness, bodily or mental, which may result in those who are affected by them becoming a permanent charge on public funds. We cannot regard with idle complacency the annually increasing and alarming accumulation of the registered insane in our asylums. The spread of insanity is not being checked by the way in which it is at present treated. Some measure is required of farther reaching scope, which shall antagonise the causes that lie at the root of early mental instability. We would point out that a preventive measure of this nature, if successful, would not only be a great gain to the community, but would materially reduce the expenditure on costly asylum accommodation which has become a burden pressing very heavily upon the rates.

Dr. CHAPPLE and Dr. MOTT spoke in support of the memorial, and Mr. HERBERT SAMUEL, in his reply, noted that the essential feature of the recommendation now made to him was that the measures were to be taken apart from the Board of Control—that is to say, outside the jurisdiction of the Lunacy Commission. If legislation were needed to carry out this purpose he feared that the prospect for the immediate future was not rosy, since Parliament was already overburdened with work; but much might be done, he thought, along the lines suggested, by administrative action. He would direct the medical department of the Local Government Board to inquire carefully into the problem and communicate with the Board of Control and to report to him upon the subject. An inquiry of this kind seemed to him necessary in order to ascertain the facts, to find out what experience had been gained elsewhere, and along what lines they should proceed administratively in default of legislation. Having carefully considered the weighty memorial submitted to him, he would not hesitate to take administrative action.

THE NEW EAST SUSSEX HOSPITAL AT HASTINGS.—The Duke of Richmond and Gordon, Provincial Grand Master of Sussex, laid the foundation-stone, on July 15th, of the new East Sussex Hospital at Hastings with masonic ceremonial. The old building has been found to be quite unadaptable for present-day requirements, and the new building, besides providing for modern requisites, will be a memorial to King Edward VII. The cost of the new hospital will be £50,000, of which a sum of about £18,000 is needed.

BRITISH PHARMACEUTICAL CONFERENCE.

FIFTY-FIRST ANNUAL MEETING.

THE British Pharmaceutical Conference inaugurated the second half century of its existence by the annual meeting which was held at Chester on July 21st and 22nd.

Mr. E. H. Farr, the President, one of the most persistent of the research workers in the pharmaceutical field, dealt in his presidential address with recent work on plant products. During the past 15 years, he said, a great amount of attention has been devoted to the study of the chemistry of plants and their products, as used in commerce, the arts, and in medicines. A great advance has been made in the direction of establishing the relationship existing between allied substances found in the same or different plants, ascertaining their chemical constitution and decomposition products, and thus making practicable a considerable degree of classification, depending on the presence of definite chemical groupings common to the members of certain classes. The physical constants and general reactions of an enormous number of compounds have been recorded, and the existence of these records very considerably facilitates the work of identification of the ultimate products of plant analysis. After dealing with the classification of the alkaloids and referring to the work done in connexion with carbohydrates, fats and oils, the glucosides and the enzymes, Mr. Farr drew attention to the stabilisation of drugs—that is, the rendering permanent of the easily decomposed natural combinations in which the active constituents of plants occur by the destruction of the ferments which cause deterioration. This process, in Mr. Farr's view, will become an important phase in the pharmaceutical practice of the future, but seeing that our drugs have gained their repute on the strength of non-stabilised material, it behoves us, he thought, not to be too hasty in altering the whole of our methods; and in any steps to be taken the medical profession should, he suggests, be called on to coöperate by submitting the products to pharmacological test and to clinical practice. At the present time Mr. Farr thinks we might with advantage proceed to stabilise our liquid extracts and concentrated infusions, the proportion of alcohol in most of these preparations being too low to stop the action of any enzyme present. "Strictly speaking," he said, "these matters should be in the province of a Pharmacopœial Committee, representing the medical profession and our own calling, and the funds proceeding from the sale of the Pharmacopœia should be devoted exclusively to defraying the expenses connected with its production, including the investigations required in that connexion. Hitherto practically all the work done with the object of bringing the volume up to date has been undertaken by manufacturing firms and by private pharmacists, their suggestions later on being adopted by the editors appointed by the General Medical Council to draft the monographs and edit any new edition."

Sixteen papers were communicated to the Science Section. Mr. H. Finnemore and Mr. E. Williamson contributed a paper of no little usefulness to prescribers, the subject being "The Incompatibility of Strychnine and Nux Vomica with Alkalies, Iodides, and Bromides." Very few systematic experiments have been recorded respecting the limits in which strychnine may be dispensed with alkaline substances without precipitation, and the series of investigations conducted by the authors shows that, speaking generally, there is a great difference between the amount of strychnine hydrochloride that can be administered with alkalies when in solution in water and when in the form of the tincture or the liquid extract of nux vomica. In the first case, should crystallisation occur, the alkaloid is deposited in well-defined crystals, which are in some cases fairly large, while with nux vomica preparations, although there is often a deposit, this is usually amorphous and does not appear to be alkaloidal. Of these two the tincture would appear to be the safer, because the alcohol in the latter retards crystallisation. The most striking feature of the experiments is the difference in the behaviour towards alkalies of strychnine in the form of the solution and that existing in its natural state in admixture or combination with those other ingredients of nux vomica seeds which are extracted with alcohol. It appears that whereas strychnine and alkalies or iodides may become dangerous under varied and indeterminate conditions when the drug is given in the form of the tincture or liquid extract, no precipitation occurs and no danger need be apprehended provided the concentration is not greater than that found under normal conditions of prescribing and dosage.

Mr. Finnemore also contributed a useful paper on the Anæsthetic Ether of Commerce. Although not recognised by the current Pharmacopœia, anæsthetic ether of commerce is largely prepared from industrial methylated spirit; the author examined the products of practically all the British makers, and "it is only fair to say that, while some samples have been rather inferior in the main, they have reached a very fair average of purity." Incidentally, it is interesting to note that the odour of ether is a very useful guide to its purity. Quite a good idea of its relative freedom from impurities may be obtained by pouring 2 c.c. or so into the hand and allowing it to evaporate, and noting the odour and that of the residue. A number of ethers in actual use as anæsthetics leave a residue which is quite pungent, and from some the residue produces violent sneezing.

Liquid extract of male fern is one of the most nauseous drugs in the British Pharmacopœia, and it is not an easy matter to present it in a palatable form. In his paper on the subject Mr. F. W. Crossley Holland suggested that it should be administered in the form of a jelly, the following being the formula:—

Liquid of extract of male fern	80 minims.
Gelatin	56 grains.
Glycerin	1 drachm.
Elixir of saccharin	5 minims.
Oil of cinnamon	1½ ,,
Water	265 ,,

These ingredients manipulated by an experienced dispenser form a not unpalatable preparation.

With the object of removing the uncertainty concerning the composition of "tinctura iodi decolorata," investigations were undertaken in the Pharmaceutical Society's Chemical Research Laboratories by Mr. W. R. Pratt, who communicated the results of his experiments. He finds that the finished tincture is an alcoholic solution of ammonium iodide with excess of ammonia, containing about 0·1 per cent. iodoform and in some cases traces of ammonium iodate, hydroxylamine, and acetaldehyde.—Commercial standards for "dried magnesium sulphate, sodium sulphate, and sodium phosphate" were suggested by Mr. J. C. Umney and Mr. C. T. Bennett, who pointed out that commercial samples of these dried salts are not of constant composition.

Owing to a shortage in the supply of belladonna leaves adulteration has, especially of late, been largely practised. In a paper dealing with this question Mr. G. Stafford Allen and Mr. H. Deane brought together a description of the chief diagnostic characters of these substitutes. The adulterants found were phytolacea decandora, scopola carniolica, and ailanthus glandulosa, and samples offered as belladonna leaves have consisted of pure scopola, mixtures of phytolacea and ailanthus, and mixtures of belladonna with each of these substitutes, the proportion of substitute varying from about 20 to 80 per cent.

In a paper entitled "The Purity of Pepsin, Bacteriologically Considered," Mr. E. Quant reported on 11 samples of pepsin in powder and scales from English, American, and continental sources which he had investigated with a view to determining their bacteriological condition. His conclusion is that the bacteriological purity of pepsin is hardly satisfactory, but that scale pepsins are superior to the powders, those which showed an acid reaction being preferable.

Mr. R. R. Bennett and Mr. T. T. Cocking suggested an improved process for the preparation of "liquor opii sedativus."

The titles and authors of the other papers read in the Science Section were as follows:—The Rate of Dialysis of Alkaloids in Aqueous Solution and in the Form of Galenicals, by H. Finnemore; the Analytical Characters of Benzoin, by T. T. Cocking and J. D. Kettle; the Mineral Constituents of Certain Tinctures and Drugs, by S. Judd Lewis; the Stability of Cinnamic Aldehyde, by H. A. Phillips; the Determination of Iron in the Presence of Phosphorus, by C. E. Corfield and W. R. Pratt; the Place of Carbon Disulphide in Official Pharmacy and Suggestions for its Further Use, by F. H. Alcock; the Composition of the Glycerophosphates of Commerce, by J. C. Umney and C. T. Bennett; and Some Uses of a Tincture Press, by E. W. Pollard.

New Inventions.

A COLD AIR LABYRINTH TESTING APPARATUS.

THE value of the caloric test for the activity of the vestibular section of the internal ear is now well established. It is at present mainly carried out by the irrigation of the ear with cold water, and, as a rule, the data are in every way reliable. At the same time the use of fluid injections into the ears is contra-indicated in various conditions, such, for instance, as the presence of a perforation in the tympanic membrane after an acute or more often a chronic suppuration in the middle ear has subsided; in such circumstances a liquid injection tends to reawaken the suppuration. Of course, if it enters a deep-seated cavity in which cholesteatoma formation is going on, the distension and pressure induced may be followed by serious or even fatal consequences. A convenient means of insufflating cold air instead of injecting cold water must have been a desideratum in the minds of many practitioners, as it has been in that of the writer. To supply this want he has devised the apparatus illustrated, which he thinks meets the requirements of the case in so far as it can be employed either on a normal membrane or on one which is perforated, either with or without persistence of suppuration. Again, it can be used with the head placed in such a position that the ear under investigation is directed downwards, which, though not impossible with water tests, is, to say the least, extremely inconvenient. The apparatus consists essentially of a tube of good conducting metal; aluminium has hitherto been used but copper has been found preferable. This is covered with absorbent linen webbing and is coiled in the form of a hollow cone. The covering is well wetted with chloride of ethyl and air is then blown through the tube by means of an ordinary spray bellows. When the air blown on the cheek is felt to have reached a high degree of coldness it is introduced into the meatus of the ear in such a direction that the cold blast impinges directly on the tympanic membrane. Inflation is continued until nystagmus is or ought to be induced. The free extremities of the tube are insulated by means of indiarubber tubing and a portion projects beyond the metal for insertion in the ear; the distal part of this is separated from the rest and can be easily changed to meet æsthetic or aseptic requirements. When the bore of the metal tube was as at first uniform the air entered in a somewhat pumping way into the ear, and this was found to be extremely disagreeable; in order to make the flow of air gentle and continuous it was only necessary to use a fairly strong secondary bag to the bellows and to choke very considerably the bore of the proximal end of the metal tube. When the instrument is thus arranged the maximum of coldness is obtainable in from 12 to 15 seconds and is kept up for about 75 seconds, when more chloride of ethyl can be added easily. In most normal cases the nystagmus is induced in an average of 30 seconds, the head being thrown back 60 degrees beyond the vertical and the eyes being intermittently directed towards the opposite side at an angle of 50 degrees from the middle line (Brüning's optimum position) and up to the ceiling. Fig. 1 shows the cold air labyrinth testing apparatus and Fig. 2 the mode of employing the apparatus. (The patient's eyes ought to have been depicted looking further towards the left.)

FIG. 1.

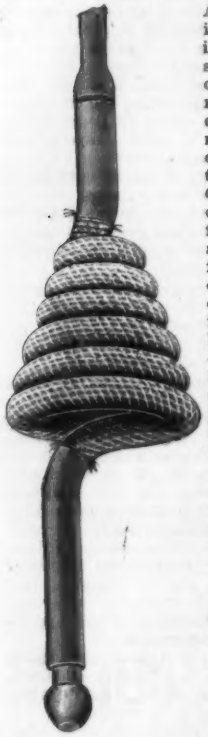


FIG. 2.

The apparatus in its present form has been constructed by Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W.

DUNDAS GRANT, M.A., M.D., F.R.C.S. Eng.
Cavendish-square, W.

RADCLIFFE INFIRMARY, OXFORD: COMPLIMENTARY DINNER TO MR. HORATIO P. SYMONDS.—On the evening of July 16th a dinner was given at Christ Church by the committee and the medical staff of the Radcliffe Infirmary to the senior surgeon, Mr. H. P. Symonds, on the occasion of the presentation to the infirmary of a portrait sketch by Mr. J. S. Sargent, R.A. Among those present in addition to the medical staff were the mayor of the city, the president of Magdalen, Mr. Gamlin, the treasurer of the infirmary, the secretary, Captain G. C. Rynd, and a number of old house physicians and house surgeons, the senior of whom was Mr. A. Winkfield, to whom Mr. Symonds was originally apprenticed. Sir William Osler, in presenting the portrait, remarked that Mr. Horatio Symonds was the seventh surgeon in direct succession from Richard Symonds, who practised at Atherstone, in Warwick, in the early part of the seventeenth century. His son Joshua was a surgeon at Shrewsbury; the third, John, practised at the same place; and the fourth, also a John, at Kidderminster. His son John practised at Oxford, and was the father of Frederic, for many years a surgeon to the Radcliffe Infirmary, whose son Horatio succeeded him. For three centuries the Symonds had served the public of that part of England in the capacity of surgeons. A son of the first John who settled in Oxford, John Addington, who practised at Bristol for many years in the middle of the last century, became one of the most distinguished physicians of his generation. His son, of the same name, became the interpreter of the Italian Renaissance to the last generation, and his daughter, Mrs. Green, a member of the committee, was one of warmest friends the infirmary had ever had. Horatio Symonds studied at University College, and after qualifying in 1874 settled in practice with his father, and soon became the leading surgeon of the Oxford district. He was elected on the staff of the infirmary in 1878, and was largely instrumental in introducing the new methods of Listerian practice. It was well known that it was through his influence that the late Mr. Briscoe left the infirmary the large sum of nearly £65,000, which had made possible the recent additions. Sir William Osler then read an exceedingly gracious letter from Mr. Sargent, to whom the company voted their hearty thanks for the splendid representation of the well-known features of their old and valued friend.

THE LANCET.

LONDON: SATURDAY, JULY 25, 1914.

A Week of Congresses.

NEXT week will be a very busy one in the medical and scientific world. Two congresses of first-class medical importance will be proceeding in the United Kingdom—viz., the British Medical Association, which holds its eighty-second annual meeting at Aberdeen, and the Clinical Congress of Surgeons of North America, which holds its fifth annual session in London. During the same week the French Association for the Advancement of Science is meeting at Havre and welcoming many members of the kindred British body who are unable to be present at the annual meeting which this year takes place in Australia. The programmes of the two medical congresses have for some time been before our readers, who know therefore the particular fields of medicine, surgery, and pathology that it will be designed especially to cover, and who know also that the activities of the British Medical Association are every whit as pronounced in the direction of medical politics as in that of scientific progress. We are leaving out of consideration here the political functions of the British Medical Association, and considering the two medical Congresses as designed especially to further medical knowledge, to standardise clinical achievement, and to explain technique and procedure.

In each case the Congresses will follow what has now become a formal arrangement in the conduct of such gatherings. At the meeting of the British Medical Association the plenary addresses are three in number and will be delivered by Sir ALEXANDER OGSTON, the President, by Dr. A. E. GARROD, who will deliver the address in Medicine, and by Sir JOHN BLAND-SUTTON, who will deliver the address in Surgery. Then the work of the meeting will be done in sections, at which presidential addresses of varying importance will be delivered, the different presidents interpreting their duties to the chair as they choose. Thereafter certain set subjects will be debated in the particular sections, the initiation of the discussions having been committed to selected observers. The remaining time of the session will be occupied as usual by the reading of independent papers, which have been approved of as suitable, and for the communication of which time can be made. Roughly this pattern will be followed at the American Congress, although here we have the organisation applied to one subject, that of clinical surgery. Here also we have preliminary addresses delivered by Sir RICKMAN GODLEE, chairman of the London Committee of the Congress; by the Hon. W. H. PAGE, the American Ambassador; and by Dr. G. E. BREWER, of New York, and Dr. G. E. ARMSTRONG, of Montreal, respectively the retiring President and the Vice-President of the Congress. In addition to these preliminary and official addresses there will be clinical addresses by Professor VON EISELSBERG, of Vienna, who will speak on the choice of operation in ulcer of the stomach; and by Dr. J. B. MURPHY, of Chicago, the President for the year, who will open a debate upon the limitations and technique of arthrodesis and bone-transplantation. In both the general and special surgical divisions of this Congress important subjects have been selected for debate, and the discussions will be opened by men who are famous for the work which they are doing and the views which they hold. But the American Congress is a clinical rather than an academic one, and its work will therefore be supplemented by a remarkable series of hospital visits such as would not be possible in connexion with any but a well-defined special gathering held in a great capital city. The main hospitals in London have offered their clinical practice for the inspection of the members of the Clinical Congress of Surgeons of North America, when opportunities for observation and informal discussion will arise among men exceptionally qualified both to give information and to sift it when given, such as must be absent as a rule from any mere general scientific gathering. Chances will thus obtain for the clearing up of doubts among the protagonists of different views, additional to those offered by set debates.

The utility of scientific congresses, whether international or domestic, general or special, has been challenged of late on the ground that far too much is said at the meetings that is not of any importance. The same judgment has at different times been passed upon gatherings as important as those of the British Association for the Advancement of Science, as well as upon the numerous semi-popular congresses now being held with frequency in this country. Those who follow this line can find much to support them, but in our opinion, when medical congresses are in question, the critics do not take sufficient account of the care that has been expended lately in the organisation of these gatherings to suppress loose and desultory talk, to check the recording of experiences that are not to the point, and to prevent the laborious refutation of views that are no longer held. Every year the attempts are multiplied to make medical congresses into meetings of thinkers and doers by employing some such scheme of arrangement as that which has been already indicated and under which certain points only, at any rate in any set programme, come up for debate. But it must be admitted that the critics sometimes have right on their side when they say that despite all pains thus

taken a large amount of time may be wasted. We do not think it therefore irrelevant to suggest to those who intend to take an active part in the congresses now imminent that they should assist the organisation of the meetings by conciseness in their communications and brevity in their speeches.

The Report of the Chief Inspector of Factories.

THE report of the Chief Inspector of Factories and Workshops for the year 1913, which has just been issued, will be welcome to all who are interested in the relation which exists between industrial employment and disease. This report bears evidence of excellently designed administration, of careful study of the conditions affecting safety and health, and of efficiency in the methods adopted to limit as far as possible the injuries which result from industrial occupations. Sir ARTHUR WHITELEGGE'S period of office has been characterised by marked advances in the knowledge of industrial disease and of the methods by which it can be controlled, and his present report affords evidence of the progress which is continuously being made in these directions. Some idea of the extent of the work which devolves upon the department is shown by the number of premises which come under its supervision, this number amounting in the year 1913 to over 250,000. In these factories and workshops all the conditions affecting health are under the observation of the staff of the inspectors, who thus become responsible for pointing out defects in lighting, ventilation, humidity of atmosphere, and the safeguarding of the persons employed against accident, whether from machinery or other source of risk to life and limb; they have also to deal with the enforcement of special rules for occupations which are known to have particular risks associated with them. But beyond this it is the duty of the department to make continued search for variations in health which may have relation to industrial processes; and previously unrecognised pathological conditions are from time to time found in this way and appropriate preventive measures adopted.

Among subjects which deserve attention in the report we may refer to an account by Dr. E. L. COLLIS of illness among the workers in one factory in which it was eventually found that both lead and antimony had been concerned in producing somewhat complex symptoms in those engaged in dealing with yarn dyed with yellow chromate of lead and other yarn in which antimony salts are used. Dr. COLLIS writes that "possibly in those cases in which lead poisoning was diagnosed the symptoms were complicated by the presence of subminimal doses of antimony, and in the other cases of illness subminimal doses of lead rendered toxic doses of antimony which might not otherwise have been so." The same observer has continued his investigations into the relation between mineral dust and pneumoconiosis, but has found no reason for modifying the views he expressed in his paper on the effects of dust in producing diseases of the lungs, read last August at the Seventeenth International Congress of Medicine.[1] The paragraphs in the report relating to this subject compare the death-rates from phthisis among men engaged in working oolitic limestone, which are about 1·5 per mille, with the death-rates prevailing in Derbyshire for persons employed in and about gritstone (with free silica up to 95 per cent.), whose phthisis death-rate is over 13 per mille. The importance of maintaining close observation in respect of the dependence of miner's phthisis upon the presence of silica in the stone which is being worked cannot be overrated. Reference is again made in the report to "weaver's cough" which had previously been the subject of a special report by Dr. COLLIS during the year.[2] This malady appears to be dependent upon inhalation of a mildew, probably a particular mildew in the warp or weft. It is suggested that the introduction of antiseptics into size should solve the problem for warp threads, but it is no use for weft threads, which are not sized. The malady is only occasionally found, and it is evidently one which should be borne in mind by all engaged in the weaving industries. Account is given of 70 cases of anthrax which were reported during the year with 7 deaths. This number is in excess of those of previous years, a fact due to increase in the cases of disease contracted from wool, probably East Indian wool; and reference is made to the tests of the Anthrax Investigation Board to decide whether steam disinfection of wool is practicable or not. In one case salvarsan was inoculated but with fatal result, apparently due to inability of the kidneys to eliminate the salvarsan after its action on the anthrax bacilli had been completed.

The above are necessarily illustrations only of the subject matter which is dealt with in the report of the Chief Inspector of Factories and in the valuable communications presented by Dr. T. M. LEGGE, the medical inspector. They suffice to show the comprehensiveness of the work of the department and the thoroughness with which it is being performed. It cannot be doubted that this work contributes substantially to improvement in the health of the large section of the population engaged in industrial occupations. It is particularly satisfactory that the spirit of research should so thoroughly permeate the labours of Sir ARTHUR WHITELEGGE and his colleagues. This is no red-tape administration, but an enlightened struggle to relieve the drawbacks and guard against the injuries which are incidental to factory life.

[1] THE LANCET, August 16th, 1913, p. 489.
[2] THE LANCET, Feb. 22nd, 1913, p. 551.

Annotations.

"Ne quid nimis."

THE MEXICAN SITUATION FROM A MEDICAL STANDPOINT.

FOR some time certain political parties in the United States have been calling loudly for a war with Mexico on the plea of "vindicating the national honour." With the rights or wrongs of the dispute between these nations we are not at present concerned, but our attention has been drawn to the medical aspects of the position by an article published recently in the *American Journal of Tropical Diseases and Preventive Medicine* entitled "The Mexican Situation," by Dr. Howard D. King, of New Orleans. In this article the attitude of these bellicose parties in the United States is sharply criticised, it being evident that while calling for war they do not realise the grave consequences that must inevitably follow. In Dr. King's opinion all thinking men must view with horror and dread the prospect of such a war, with the certainty of war's grim ally, pestilence, also taking the field. Behind the looming presence of war stalk the shadows of epidemic disease. The medical profession in the United States is aware, for example, that two of the most serious epidemic maladies, plague and yellow fever, are at present exhibiting signs of activity which forebode mischief, more particularly to the Southern States of the Union. It is common knowledge that the prospect of one or both of these dangerous diseases extending beyond their present limits is just now causing some anxiety in official circles; and it is generally recognised that if the United States are plunged into a war with Mexico the spread of the infection would be greatly facilitated. The present plague situation in America was dealt with in THE LANCET of July 11th, and the position as regards yellow fever is also somewhat gloomy, judging from current reports. If it became necessary to land large bodies of non-immune troops on the shores of Mexico, in parts of which yellow fever is endemic, it would be very difficult to prevent the development of a serious epidemic of the disease, with probable conveyance of the infection to the Southern ports of the United States. The way in which small-pox and enteric fever harass armies in the field is now well recognised, and although vaccination on the one hand and antityphoid inoculation on the other might diminish the dangers, yet it is more than probable that these beneficial procedures would not be generally carried out during the bustle and excitement of dispatching an expeditionary force to the seat of war. Small-pox is already prevalent on the Northern frontiers of Mexico among the refugees from those parts of the interior where military operations are being carried out. At the port of Vera Cruz, now occupied by a United States force of soldiers and sailors numbering nearly 30,000, small-pox is also prevalent; and diarrhœa and dysentery, it is reported, have increased of late. Apart from the ravages of epidemic and other diseases there would have to be reckoned, in the event of a war, the deaths and disablements upon the field of battle. The medical mind can best appreciate the horrors of war and the advantages of dealing with disputes by diplomacy rather than by the edge of the sword. The soldier takes a more sanguine and professional view of the case, and naturally prefers a settlement by force of arms. In this connexion Dr. King remarks: "War means devastation and blood, depopulated fields and smoking villages; the acclamation which the conqueror wins from one portion of his species is answered by the curses and execrations of another; the laurels of the warrior are always bedewed with the tears of widows and orphans; the delusive splendour, the proud and imposing array with which he contrives to gild the honours of his profession, are but the pomp and retinue of the Prince of Terrors; Disease, the warrior's faithful ally, is the King of Terrors." It is greatly to be hoped that, in spite of the cavils of political malcontents, President Wilson will persevere as far as practicable in his peaceful policy, which will ultimately assure in all probability the deliverance of the United States from what Dr. King designates as "a most frightful visitation of epidemic disease." The recent retirement of ex-President Huerta from Mexico should remove many of the obstacles to peace and thus prepare the way for a satisfactory settlement of the protracted dispute between these two determined nations; at the least it should postpone for a time the threatened war and its direful consequences.

CLARET AS A BEVERAGE.

WHEN, for varying reasons, a wine is to be selected because it contains the least amount of sugar, of alcohol, and of acid, the choice should obviously fall upon claret, for analysis shows that the percentage of these substances is lower in Bordeaux than in any other wines. It is quite a common impression, however, that the white wines of the hock and moselle type are more innocent than other wines in these three respects. That is not the case, although we are finding no fault with these wines. To not a few people claret appears to be a sour-tasting wine simply because it contains no sugar to speak of, which in other wines masks the acidity present. Claret is practically a finished wine—that is to say, the original sugar of the grape is for all intents and purposes completely changed by fermentation, and as the original strength of the Médoc grape juice as regards sugar is relatively weak, the amount of alcohol produced is correspondingly small. The production of claret is perhaps the simplest example of wine making. It is purely fermented grape juice with nothing added and nothing deducted. When therefore a wine becomes the subject of a prescription it would appear that we are on safe grounds dietetically when we recommend claret if qualities like freedom from sugar and from an excess of alcohol and acidity are characteristics to be sought for. When a stimulant is ordered it has been customary for some time past to recommend weak whisky and water as a safe beverage. The danger here, however, is that of overstepping the alcoholic allowance. The simplicity of genuine claret is accountable for its well-known sensitiveness, which perhaps has brought it into disfavour in some quarters. Its flavour is peculiarly evanescent and delicate and is easily spoiled by careless management. But the fact that claret will not keep sound more than a few hours after opening precludes the suggestion of preservatives, including extraneous alcohol, being added. As a rule the best clarets are the most liable to become unsound. The coarse fortified clarets keep longer for obvious reasons. Connoisseurs

value sound claret for its exquisite flavour and delicacy of character. Not so many years ago the fine wines of the Médoc, including all the superior classed growths or "crus," but not them alone, commanded relatively big prices, but nowadays many excellent wines can be purchased showing all the pleasing qualities of the genuine high-class Médoc wines at a very reasonable figure. It is surprising that the medical profession and the public do not realise this fact. Excellent genuine wines, especially of the vintages 1907 and 1909, from the best districts of Médoc and St. Emilion, and embracing such well-known growths as the Châteaux Giscours, Beychevelle, Léoville, Cos d'Estournel, L'Evangile, and others, are now to be had at prices not exceeding 30s. per dozen, while there is a large choice of wines of exceptional quality at considerably lower prices. No apology for bringing these facts forward is needed in view of the dietetic virtues of these wines. It is very doubtful, according to our experience, based in part upon laboratory examination and in part upon the evidence of the palate, whether the supply of sound and really superior clarets was ever so good, so cheap, and so plentiful as it is now, and from the point of view of alcohol it is safe to say that if for beverage purposes at dinner or luncheon claret were substituted for diluted spirits, liqueurs, and so forth, there would be much less alcohol consumed, to the unquestionable advantage of the consumer. Also the æsthetic palate would gain by those agreeable wholesome impressions which good Médoc wines are invariably capable of giving, and appetite is thus helped. A sound claret, according to the foregoing considerations, may almost be placed in the temperance category by reason of its low alcoholic strength, and we are not disposed to think that in drawing attention to the good value in choice clarets now available to the public any possible injury to the cause of temperate living, which all reasonable persons have at heart, can arise.

A NEW TEST FOR MORPHINE.

IN a preliminary report, published in the *Medical Chronicle* for July, Dr. T. H. Oliver, medical registrar at the Manchester Royal Infirmary, describes a new reaction of morphine and its salts which may turn out to be exceedingly useful to analysts. If to a solution of morphine a few cubic centimetres of hydrogen peroxide and a little strong ammonia are added, and the mixture be stirred with a piece of copper wire, the previously colourless solution assumes a deep port-wine tint, with a considerable evolution of gas. The test is said to be exceedingly delicate, for 0·00002 gramme of morphine can be readily detected; but in dealing with very small amounts it is necessary to add a few drops of potassium cyanide solution to remove any blue colour (from the copper) which may otherwise mask the port-wine tint. It is important not to add the cyanide before the copper, as this may prevent the occurrence of the reaction. The reaction is also a very delicate one for copper, detecting 0·00001 gramme easily. It will occur if monomethylamine (NH_2CH_3) be substituted for ammonia, but not with dimethylamine, nor with caustic soda. Codein and dionin (methyl and ethyl morphine respectively), which are indistinguishable from morphine by ordinary tests, do not give the reaction; apomorphine gives an orange colour. The following alkaloids give negative results: strychnine, brucine, atropine, narcotine, heroin, cocaine, nicotine, cephalin, emetine, veratrine, physostigmine, pilocarpine, and conine. Other substances were tried as substitutes for copper but proved useless, such as aluminium, iron, nickel, calcium, the salts of manganese, cobalt and iron; and colloidal selenium and rhodium. The red substance which is formed is insoluble in the ordinary morphine solvents, and also in ether, chloroform, and toluol; and the whole of the morphia is changed, for none can be recovered from the ammoniacal solution. Dr. Oliver does not state whether the presence of body fluids, such as urine, blood, serum, cerebro-spinal fluid, interferes with the reaction; but as his report is stated to be preliminary this point will doubtless engage his attention, for its medico-legal importance is obvious. We have tried the test described and obtained confirmatory results.

MERYCISM.

MERYCISM, or chewing the cud, is a rare phenomenon among human beings. It was first recorded in 1681 by Fabricius ab Aquapendente; he and some other writers of that epoch saw in it the mark of the beast, and even noted that merycising patients were apt to grow horns on their foreheads and the like. Nowadays it is more reasonably held to be an atavistic phenomenon, not due to an unfortunate maternal impression during pregnancy, as Peyer (1685) believed, or to gastric antiperistalsis, such as occurs in vomiting (Haller, 1764), or to pylorospasm. In 1904 Presslich collected 145 cases of merycism from the literature; most of the patients were adults, but it appears that some 30 were children; and Schippers has found records of 10 instances in infants to which he adds[1] two new cases of his own. It is a curious fact that men seem to be more prone to rumination than women except in infancy; Wirtz found 10 women among over 140 merycists, while 7 out of 11 ruminating infants were girls. The habit is generally adopted between the ages of 5 and 15, and it appears that heredity, or perhaps imitation, is an important factor in its occurrence; it is not evidence of feeble-mindedness or idiocy, as has sometimes been supposed. Yet it is very much under the control of the nervous system. Some patients indulge in merycism only after partaking of certain kinds of food—vanilla ice, for example, or liquid and not solid food; infants may cease to ruminate when exhibited for demonstration purposes, or when an X ray examination is to be made. It appears that there is an optimum quantity of food that should be given to these infants when merycism is to be provoked, which was about four ounces in one of Schippers's patients. There is no doubt that in infants the habit is a bad one, leading to chronic malnutrition. In none of the 12 recorded cases was the child up to its proper weight, and in several the temperature of the body was often subnormal, falling as low as 91° F. The outlook is less favourable when the merycism is combined with dyspepsia, as is often the case with infants. The object of treatment in these patients must be to prevent the child from merycising. It should be given food that it does not care to ruminate, in quantities (usually small) that do not provoke rumination; being a neuropath, it should be kept quiet, and it is not likely to benefit by the exhibition of sedative drugs. As for adult merycists, Schippers indicates the necessity

[1] Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, 1914, 785.

of determining how far rumination is akin to vomiting—a question that might well be answered by X ray examinations. It appears that the adult patients themselves clearly distinguish between the two processes. To describe merycism as a reflex movement, or even as a "Bedingungsreflex" as described by Pawlow and Czerny, a conditional reflex dependent upon an association of ideas rather than any direct stimulus, does little to advance our comprehension of the phenomenon. Schippers points out that both his infant patients might begin to chew the cud while asleep, waking up at once, while Wirtz states that merycism may go on during dozing; yet the true associative reflex can only occur in persons who are awake.

MR. H. G. WELLS ON MEDICAL BIBLIOGRAPHY.

Mr. H. G. Wells's paulo-post-future tense is somewhat hard on the arduous achievements of the present. In his "World Set Free" we are told that in 1970 or so the world will have been benefited by vast improvements in surgery and medicine, and these will have been in great part the result of a tremendous system of research indexing, which, while preventing the medical men of the future from doing the same work twice, will constantly tend to keep them in touch with the newest discoveries and the most notable recent cases, as well as all the ancient literature of their subject. "Of course, the present indexing of research is in itself a very big work, and it is only now that we are getting it properly done," says Mr. Fowler, an English or American surgeon of the far future, addressing his eminent Russian patient in the presence of the Italian director and the Finnish matron of "the new station for surgical work at Paran, high in the Himalayas." In old days, according to Mr. Fowler, indexers were a mean paid race; in 1970 they work for the love of the thing, a truly damnable practice from the darkened point of view of 1914. Mr. Fowler's patient, a Russian cripple, has contributed to world-thought the scarcely original discovery that self must be abolished in favour of society, and Mr. Fowler is about to kill him up in the surgically aseptic Himalayas, and he is glad to talk a little shop before succumbing! It is only natural. But is it fair for 1970 thus to patronise 1914? True, we grant that in 1970 probably a thousand persons will be "thinking hard" to one who did so in 1900, but we must still set up our feeble protest against this wholesale snowing under of the present. Medical indexing is not neglected among us. Apart from the magnificent "Index Medicus" of the Surgeon-General in Washington, the whole of the medical literature stored in London has been very fully indexed. True, only author-titles of books and pamphlets, and subject-titles derivable from these, are indexed in England, but in America magazine and periodical articles are recorded as well. If, as Mr. Wells seems to suggest, every case, every operation, every separate subject, mentioned in the course of every article were indexed, the resulting mass of catalogue cards would be so enormous as to stultify research itself. The researcher would be lost in a labyrinth of facts, most of which would be of very little use to him. At present the indexer, who in England is not, as a rule, specifically paid as such, knows that the title of a modern article is fortunately a fair indication of its contents, but, like a faithful worker, he rarely omits to mention any salient subject which may be recorded therein. Thus in recording the title of an ancient book—say Alpinus on the Medical Botany of the Ancient Egyptians—the good indexer who is also an alert reader will mention the balm of Gilead, with which that remote work greatly deals, but the shortness of human life will prevent him from indexing the whole work page by page. What Mr. Wells's Mr. Fowler should have said is that in 1970 an index of all important cases is being kept, and not an index of every subject in every book. Cases are the gist of medical literature.

UMBILICAL SINUS DUE TO A PIN IN THE APPENDIX.

IN the *Australian Medical Journal* of May 23rd Dr. R. M. Downes has reported the following curious case. A healthy-looking girl, aged 3½ years, was seen. The history was that 16 months previously a small protuberance from the umbilicus was noticed. It discharged pus two days later, and this subsequently occurred from time to time. The discharge at times had an offensive odour, but not suggestive of bacillus coli infection. From the apex of the protuberance a probe could be passed for about 1½ inches in a caudal direction. The sinus was filled with bismuth paste and under the X rays was seen to form a small pouch situated slightly to the right of the middle line. Methylene blue injected into it did not appear in the urine. She was shown at the Pediatric Society as a case of cyst of the urachus. The sinus was curetted and mopped with tincture of iodine without benefit. The discharge continued at intervals for a year, the longest period at which it was absent being four months. At the end of this time it was more profuse than ever, and it was decided to adopt radical measures. Under chloroform the probe was now found to pass 4 inches in a lateral and downward direction, and for the first time a mass was felt in the right iliac fossa. A vertical incision was made to the right of the middle line, the anterior layer of the rectus muscle was opened, the muscle was displaced laterally, and the probe was cut down on. The tract was found to be internal to the transversalis fascia, the sinus was swabbed with iodine, and the layers were united. The discharge continued to be profuse and the mass remained unchanged. Three weeks later the incision was reopened and extended. On cutting down on a director in the sinus a black and coated pin was found, and the peritoneal cavity was opened. The mass previously felt was partly due to a structure adherent to the peritoneal end of the sinus and running towards the cæcum. This was first thought to be a Meckel's diverticulum, but after the mass was separated it was found to be an appendix arising from a cæcum of the fœtal type. The appendix was removed, the wound sutured as far as possible in layers, and the septic umbilicus cut out, a small tube being left in for 24 hours. Recovery was uneventful. The appendix and surrounding tissues were very thickened. The distal end, where it was adherent to the sinus, was bulbous, and closed from the rest of the appendical lumen by an impermeable stricture. The mucous membrane showed signs of previous inflammation. No communication with the umbilical sinus could be demonstrated. A urachal cyst may have been present into which the pin was accidentally introduced, and the appendix may have become adherent to the peritoneum

covering this cyst internally. But Dr. Downes thinks it much more likely that a swallowed pin passed into the appendix—an occurrence which would perhaps be more easy owing to the latter's fœtal type of origin from the cæcum; that it then caused inflammation of the appendix, with adhesion to the parietal peritoneum in the region of the umbilicus, and finally passed through into the abdominal wall, where it remained embedded, the resultant pus finding a route of egress by the umbilicus. In either case it is curious that so much inflammatory change in the appendix and fixation of the cæcum should not have given rise to abdominal pain or intestinal disturbance.

TEMPERATURES IN SCHOOL CHILDREN.

IN continuation of the series of Research Memoirs of the Drapers' Company, the statistical department of University College, London, has issued a contribution on national deterioration entitled, "A Statistical Study of Oral Temperatures in School Children, with especial Reference to Environmental and Class Differences."[1] It is the joint production of Mrs. Mary H. Williams, M.B., Miss Julia Bell, M.A., and Professor Karl Pearson. Most of the materials for this investigation were collected by Dr. Mary Williams in the course of her duties as medical inspector of schools in Worcestershire. They include the taking of the temperatures of nearly 3000 children, record being kept of the age, weight, and height of the children individually. They were also examined clinically with respect to the presence or absence of definite disease, and were classed accordingly. The diagnosis was wholly independent of the temperatures, the object being to test how far temperature may be relied on as an indication that further examination as to pathological condition was required. In order to compare the physical condition at stated ages of boys in elementary schools with that of boys of a different social class appeal was successfully made to the headmasters of Winchester and Charterhouse. Similar comparison of the girls was secured through the courtesy of the headmistress of the great public schools at St. Andrews, and of the lady superintendent at the Royal Soldiers' Daughters' Home at Hampstead. The results of medical inspection respecting the relation of pulmonary tuberculosis to rheumatism among school children are very interesting. The authors explain that diagnosis was based on the following characters. Pulmonary tuberculosis was indicated by physical signs alone, not symptoms; the common signs found being persistent localised basal dulness with râles. Rheumatism was diagnosed on: (*a*) clear history of "growing pains"; (*b*) presence of mitral disease; (*c*) history of chorea. As far as practicable, inquiry was made as to the occurrence of tuberculous or rheumatic affections in either or both of the parents. In summarising the results of their investigation the authors affirm the existence of a real and marked difference between the children of the upper and lower classes, the temperatures of the poorer children at the several ages being undoubtedly the higher. No observations of these conditions were practicable at the public schools, but the authors suspect this higher temperature to be due to the greater prevalence in the poorer classes of "puerile phthisis" and rheumatism. The rheumatism is probably of a markedly hereditary character; the puerile phthisis appears to be also partly hereditary, but it is also partly due to greater risk of infection in some of the primary schools, or to an environment favouring the development of an infection received elsewhere. With regard to the high temperatures recorded in certain of these schools, the authors suspect that they run through epidemics of puerile phthisis at different seasons and with different degrees of severity. An important statement is noteworthy with reference to rheumatism and phthisis in early life. The authors agree in affirming that no child is affected with both these conditions; the two poisons appear to be antagonistic. Dr. Williams states that in the thousands of children she has examined she has never seen a case in which she was certain that the two diseases coexisted in an active stage, and only two cases in which she was doubtful on this point. The observation agrees with a previous statement by Sir Dyce Duckworth that one of the most remarkable features of the arthritic diathesis is its resistance to the inroads of tuberculosis. Dr. R. H. Miller, of the Paddington Green Children's Hospital, is also quoted by the authors as writing that rheumatism and tuberculosis are very seldom found active in the same subject. There is apparently some evidence that the one infection tends to protect against the other, but we do not agree with the author's conclusion that pulmonary tuberculosis is a common disease in childhood, since other basic conditions, such as bronchiectasis and collapse, would have to be excluded in such an inquiry as this.

[1] London: Dulau and Co. Pp. 124. Price 6s. net.

THE SIMULATION OF ANEURYSM BY OTHER AORTIC AND CARDIAC DISEASES.

X RAYS have aided largely the diagnosis of thoracic aneurysm. Mediastinal growths can in a majority of instances be thus distinguished from aneurysm. There are, however, certain aortic conditions which closely resemble aneurysm. Usually the conditions are of syphilitic origin—a syphilitic aortitis. General aortic dilatation may show marked episternal pulsation. Again, as Dr. Carey F. Coombs points out,[1] arterio-sclerosis may imitate aneurysm, and so, also, may cases of aortic dilatation associated with aortic valvular incompetence. In all these cases some of the physical signs of aneurysm are produced. There is on either side of the manubrium sterni a strip of dulness extending as far as two fingers' breadth beyond the sternal margin on the right and rather less on the left. Pulsation is visible at the inner ends of the second and third right intercostal spaces. Often the aortic second sound is accentuated, even when followed by a diastolic murmur. Occasionally, if the aortic valves are incompetent, hæmoptysis may occur. Sometimes pressure signs are present. There may be inequality in force of right and left carotid or radial pulses, but this is due to locally distributed aortitis at the site of exit of these vessels from the aorta. Of cardiac conditions which resemble aneurysm, those associated with mitral stenosis are of interest. Pressure signs may be caused by enlargement of the left auricle, such as paralysis of the left recurrent laryngeal nerve due, it is suggested, not to direct contact with the auricle but rather to the pushing up by the auricle of the pulmonary artery, and it is this structure which nips the nerve between it and the aorta. Two instructive cases of such paralysis are recorded. Less familiar pressure

[1] Medical Press, May 13th, 1914.

signs arising from the same cause are inequalities in the radial pulses; pressure upon the left bronchus; pupillary inequality; and, finally, even dysphagia. A screen examination of a case presenting the latter symptom showed diversion of the bismuth stream to the right at the level of the auricle, whilst there was delay at the level of the cricoid cartilage. Attention is also directed to the fact that hypertrophy of the conus arteriosus of the right ventricle may simulate aneurysm. Distinction in all these cases may be arrived at, we suppose, with some certainty if all the factors of the case be taken into account, but X rays furnish, by their power of excluding aneurysm in suspect cases, a powerful final corroborative factor.

EPIDEMIC ALOPECIA AREATA.

BALDNESS in its ordinary form has not been held to be a definite infective condition. Certainly no definite causative organism has been found. It has been suggested that alopecia areata is not infective, but there is some difference of opinion amongst dermatologists, and an epidemic of alopecia areata has been described by Haldin Davis in the *British Journal of Dermatology* (1914, xxvi., 207) which certainly suggests an infective origin in some cases. The epidemic broke out at an orphanage for girls, of whom there were 300, all under the age of 14. It was first noted in March, and in June there were 174 cases, amongst which were two foster-mothers and a servant-maid. The patches in the head resembled ringworm, but the author was emphatic that this was not the condition. The patches were not entirely bald; there were some stumps of hair which were swollen at the free end and which did not come out easily. The hairs which were left were found to break with difficulty (unlike ringworm), and within the hair, near the seat of fracture, was an opaque substance which was doubtless concerned in the condition and which was due to some infection, the organism of which, however, could not be discovered. There were no scurf and no parasites in the cases. The condition was suggested by the writer to be alopecia areata, but not of the ordinary type. The treatment adopted was vigorous and successful. The hair was washed with methylated spirit and soap, then an ointment was rubbed in consisting of beta-naphthol and sulphur. Massage of the head was given. In the severer cases a blistering fluid was applied, and in eight cases the scalp was shaved. By October all the cases were cured. In the following March a similar outbreak occurred. There were 30 cases. Hairs from 15 of these cases failed to show evidence of ringworm. In six weeks this second epidemic was ended.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THE number and quality of the papers communicated at the fifty-first annual meeting of the British Pharmaceutical Conference, which was held at Chester this week, bear evidence of the continued usefulness of an organisation which has contributed largely to the advancement of pharmaceutical science during the last half century. The President's address consisted mainly of an epitome of the work that has been devoted in recent years to the study of the chemistry of plants and their products, and in view of the position held by Mr. E. H. Farr among workers in this domain his suggestion that problems of materia medica should be considered by a pharmaceutical committee representing the medical profession and pharmacy, and that the funds proceeding from the sale of the British Pharmacopœia should be devoted exclusively to defraying the expenses connected with its production, including the investigations required in that connexion, is worthy of respect. But it is a suggestion that connotes some financial compensation for the General Medical Council. Of the papers read at the Chester meeting several are of direct interest to medical practitioners, notably those which refer to anæsthetic ether and the prescribing of strychnine in combination with alkalies. Although not recognised by the British Pharmacopœia, anæsthetic ether is largely prepared from industrial methylated spirit, the high price of that made from rectified spirit having of late years been the cause of the increased use of the former. As a matter of fact, methylated ether is in use at all the large London hospitals, and a paper by the chief pharmacist at Guy's Hospital, in which the results of the scrutiny of a number of samples of methylated ether are stated, is therefore of especial interest, while it is satisfactory to know that anæsthetists can continue to use the cheaper product as a substitute for that manufactured from rectified spirit, which is subject to a high Excise duty. It seems clear, from the communication on the incompatibility of solutions of strychnine with alkaline substances, that the limits within which these may be dispensed without fear of precipitation and consequent danger are by no means so wide as those within which preparations of nux vomica may be mixed with alkalies. These communications serve to show how pharmacy can assist medicine, and other papers furnish material which, indirectly at least, can be utilised to advantage in medical practice.

Sir Ronald Ross, K.C.V.O., F.R.S., will deliver the biennial Huxley lecture at the opening of the winter session at Charing Cross Hospital Medical School on Oct. 1st.

AT a meeting of the council held on July 16th Sir John Tweedy, F.R.C.S., late President of the Royal College of Surgeons of England, was elected President of the Medical Defence Union, vice Dr. Edgar G. Barnes, retired.

Sir St Clair Thomson has been elected an Honorary Fellow of the American Laryngological Association. The American Laryngological Association is a select body, the number of Active Fellows being strictly limited, and the list of Honorary Fellows very restricted, up to the last meeting Chiari, of Vienna, Massei, of Naples, Moure, of Bordeaux, and Sir Felix Semon comprising the list.

THE Registrar of the General Medical Council has received a copy of a despatch from His Majesty's Consul-General at Rio de Janeiro stating the conditions under which persons holding foreign diplomas are permitted to practise medicine, surgery, and dentistry within the Federal District. This will be incorporated in the next edition of the pamphlet published by the Council giving the conditions under which persons qualified in their own country may practise abroad, and in the meantime the Registrar will be pleased to show the despatch to anyone who calls at the Council office, 299, Oxford-street, London, W.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the supporters of the Imperial Cancer Research Fund took place on Tuesday, July 21st, at the Examination Hall, Queen-square, Bloomsbury, the Duke of BEDFORD presiding.

There were present among others Sir R. Douglas Powell, Sir Thomas Barlow, Sir Rickman J. Godlee, Sir William Church, Sir W. Watson Cheyne, Captain Sir John Shelley, Sir John Tweedy, Professor G. Sims Woodhead, Dr. F. W. Andrewes, Dr. John Tatham, Sir Frederic Eve, Dr. J. A. Ormerod, Dr. E. F. Bashford (general superintendent), Dr. J. A. Murray, Dr. W. E. Bullock, Dr. Sternberg, and Mr. F. G. Hallett (secretary).

REPORT OF THE EXECUTIVE COMMITTEE.

The report of the executive committee was presented by Sir WILLIAM CHURCH. In this report Mr. F. G. Hallett, the secretary of the Fund, briefly summarised the proceedings of the year, mentioned the changes in the personnel of staff and workers, and enumerated the publications from the laboratories during the year. The details of the pathological and research work were given to the meeting in the report of Dr. E. F. Bashford, the general superintendent.

THE REPORT OF THE GENERAL SUPERINTENDENT.

Dr. Bashford's report mentioned first a diminution in the claims to "cure" cancer which had been brought to the notice of the Fund. He stated also as a result of many experiments during the year that "up to the present time, even in the laboratory, the only way in which rabbits, guinea-pigs, rats, and mice can be freed with certainty of transplanted and often of spontaneous tumour is by early removal." The number of experimental investigations has been decreased during the year as some of the tumour strains on propagation duplicated the behaviour of other strains. The experiments on heredity are being continued, and the biochemical investigations have been further developed during the year, while the observations on the specific properties of the tumour cells have gone to show how independent these cells are of influences proceeding from the environment, the etiological issues being thus further narrowed to alterations proceeding within the cell mechanism itself and not awakened by external factors.

Statistics.

With regard to the statistics of cancer the report said:—

> The insistence in 1905 on a more detailed study of age-incidence has been completely justified and has rendered a further statistical report superfluous. Many new facts are revealed—e.g., it is confirmed that the rates of mortality for different organs at different ages are similar for the two sexes, while the separate organs vary widely among themselves, some showing a curve rising to a maximum only at the end of life, others a curve with a maximum earlier and followed by a fall to the end of life, and yet others two maxima at different age-periods. These peculiarities must be of the utmost importance in elucidating the nature of the disease.
>
> The separate tabulation of deaths in institutions enables a comparison to be made between areas where institutions are common and where they are rare, and thus brings out the fact that they contribute to raise the number of deaths assigned to cancer. This separate tabulation also shows that no comparison between deaths in hospital and deaths outside is possible; such a comparison has, however, in the past often been used, and the increase in deaths from cancer in hospital statistics advanced as proof of a true increase of cancer in the population generally. The tabulation of deaths in institutions shows also that a higher proportion of males than females seek the aid of such institutions, and also that the ages at death are lower than in the general population. The explanation probably is that where the breadwinner is attacked resort to hospital becomes quickly more essential than when this is not the case.
>
> As regards the increase in the number of deaths assigned to cancer, it is quite justifiable to make such a crude statement as that the number of deaths has increased in 1911 for females to 1088 per million living in 1911 as compared with 508 in 1860, and for males to 891 from 200 during the same period. It is also justifiable to express these facts in another way (also crudely)—namely, that of women attaining the age of 35, 1 in 12 was recorded as dying of cancer in 1889, but 1 in 7·4 in 1911, and of men 1 in 21 in 1889, but 1 in 9·7 in 1911. This latter statement also brings out more clearly how the male rate has been overtaking and approximating to the female. However, these figures ought not to be set out, as they still are, before the public without any qualification, and interpreted forthwith as a demonstration of the reality of the increase of cancer.
>
> Both methods show the approximation of the male to the female death-rate and also raise the question of why the increase, if real, should affect one sex more than the other; but both lump all cases of cancer together, a proceeding which, if excusable in 1889 because nothing else was possible, is quite a misleading and erroneous thing to do to-day.
>
> It is not proposed to refer in detail to the real or apparent increase of cancer, since modern statistical methods were applied by independent investigators to the new data at a recent meeting of the Epidemiological Section of the Royal Society of Medicine, when also the subject was fully discussed. Suffice it to say that the increase in the number of deaths is not uniform for the different parts of the body and that for some parts, notably the uterus, an actual fall is persistently evident since 1902. For this organ diagnosis is relatively easy. Therefore, the number of cases treated probably approximates more closely than in other sites to the absolute number, and the effects of successful surgery are showing themselves in diminution of the deaths. For other parts of the body the increase may be apparent, for yet others real, although it is as yet impossible to decide. All the statements widely circulated in the newspapers as to the increase of cancer as a whole should be ignored, and attention only paid to those in which the different parts of the body are considered apart.

Cancer Areas and Cancer Houses.

In the concluding part of the report Dr. Bashford went thoroughly into the question of "cancer areas" and "cancer houses," pointing out that the determination of whether cancer is more frequent in certain houses is very much more complex than the simple arithmetic of enumeration.

> "All the details of the population," he said, "not only of the 'cancer houses,' but also of the other houses in the same neighbourhood, must be known as regards numbers living in each house, sex, age, nature and site of the growth, duration of stay, occupation (environment and irritation), habits (alcohol, tobacco). Economic considerations must also be taken into account, since a house may be sought after by old people who have to content themselves with old or insanitary buildings because of the low rental, or a house may be let to couples without children, or may be frequented by aged lodgers. It has been shown above by experiment that hereditary influence cannot be summarily dismissed; further, the presence of other diseases cannot be ignored. The duration of stay is essential to determine whether the disease was acquired on the spot or brought from one district to another, but the long duration of the disease and the movements of population present peculiar difficulty to obtaining this information. The influence of occupation may overlap or be of more or less importance than habits such as indulgence in alcohol, tobacco, or diet. Very important will be the time relation between series of cases—viz., whether they succeed one another rapidly or are so distributed in time that this relationship has as little significance as the

aggregation in families or in houses. Account must be taken of the fact that the frequency recorded to-day is very much greater than it was 50 years ago."

The report then gave details of an investigation conducted by Dr. Bashford into the well-known instances of cancer attacking certain houses and streets. The original examples brought forward by the late Dr. Law Webb having been shown to break down under analysis of the data, the report gave an account of visits paid by the superintendent to the different localities described respectively in 1898 and 1903 by Mr. D'Arcy Power as suggesting an endemic infection. It was difficult to recollect the evidence and test the statements, but the conclusion of the report was that the endemicity was not established. Mr. Power had already suspected that the age factor explained the apparent position, for in both village communities the higher ages were unduly in excess. Of the last case inquired into the report said:—

It has been deemed desirable to make an independent inquiry into a case which attracted widespread attention recently as the result of an address by Sir Thomas Oliver, published in THE LANCET of April 4th of this year, and widely commented upon in the lay press. He stated that his attention had been drawn to a short street in a small town in which between the 15 years 1893 and 1908 19 persons and one dog had died from cancer. In some of the houses two or three cases had occurred. Since in nearly all the patients there was no hereditary history of the disease, the large number of deaths among successive occupants suggested that the matter is more than a coincidence. Commenting on "cancer-houses" Sir Thomas Oliver wrote: "It is not an agreeable subject, and many medical men are of opinion that cancer germs lurk in houses."

The street referred to by Sir Thomas Oliver is in the town of Ayr. The attention of the Imperial Cancer Research Fund was drawn to it in 1908 as the result of a letter addressed by a lady to the late King Edward VII. The data obtainable in 1908 did not justify an investigation. The lady continued to make inquiries, and wrote to various Government departments in London and Scotland, as well as to prominent members of the medical profession, and in 1912 published an article in the *Ayrshire Post* entitled "Observations on Cancer Areas." This article was a memorandum she had submitted in 1908, amplified and modified as the result of her experience and inquiries. As the result of correspondence and an interview it appeared that the lady, whose mother had died from cancer, held strong views that cancer is an infective disease; that she had been called upon to investigate it; and that in her opinion the alleged frequency of cancer in the street referred to was due to its dissemination from paupers in the workhouse through the agency of mice and fleas, which came into houses in the winter time. Inquiries were made early in 1912 of the local authorities in Ayr, from which it appeared that they had inquired into the statements and did not agree with the importance attached to them. In consequence of Sir Thomas Oliver's address it seemed desirable to make an investigation on the spot, and a visit was made to Ayr, where every facility was given by the town clerk, the burgh medical officer, and the medical officer of health for the county. As a result the following facts set out in the table were obtained.

Reference to the table will show that it includes two duly authenticated cases of cancer not given in the lady's catalogue, and transfers three cases to the correct houses, including one to the opposite side of the street. Cancer as a cause of death is not upheld in at least 11 out of the 22 instances advanced. The dog is omitted in view of the fact that all the weight of scientific evidence is against the communication of cancer from one species to another, and also because no information could be obtained about it beyond the original assertion that it was a young dog, 4 years old. In the 11 cases in which nearer examination bears out the statement that death was due to cancer, the site alleged did not agree with that given on the death certificates, although for three of these five there is merely confusion between the primary and secondary site, and in the other two the vague statement of "bowel" is replaced by the accurate statement of "rectum" and "prostate." For a sixth case, where the site was not stated originally, a definite reference to "stomach" has been obtained. The comparison of the facts as actually found, with those on which Sir Thomas Oliver based his statements, is made in the table.

Table showing Death of and Cases of Tumours in Cancer Area, Ayr, from 1892–1912.

House.	Case.	Age.	Occupation.	Died.	Alleged site of cancer.	Certified cause of death.
A	1	64	Clergyman.	1894	Bowel.	Epithelioma of rectum.
	2	—	Maid. Operation.	1912	Stomach.	Still living.
B	3	65	Wife of manufacturer.	1893	Womb.	Cancer of uterus, 1 year.
C	4	86	Widow of doctor.	1897	Stomach.	Morbus cordis. Cardiac failure.
	5	80	Gent. No relation.	1908	Kidneys. Not verified.	Renal following upon with cystitis.
D	6	73	Retired.	1892	?	Cancer of stomach, 4 months.
	7	78	His wife.	1911	Breast.	Cancer of lung.
E	8	—	Lady feared to have cancer.	1912	Internal.	Still living, not ascertained.
	9	69	Hatter's wife.	1899	Not in list submitted.	Cancer of lung.
F	10	—	Lady.	1900	Breast.	Died in Glasgow.
G	11	71	Lady.	1896	Womb.	Cancer of stomach.
	12	80	Brother of above.	1898	Bowel.	Cerebral anæmia. Senile decay.
	13	—	Sister of above.	1908	,,	Not found.
	—	—	New people bought house.	1907	—	—
	14	—	Young lady. Operation.	1910	Breast.	Still living.
	15	84	Father of above.	1911	Stomach.	Cancer of stomach.
	16	71	Mother.	1912	—	Paralysis agitans. Carcinoma of left lung.
H	17	60	Wife of lawyer.	1895	Arm.	Scirrhus of mamma, 2 years.
	18	79	Lawyer.	1906	Bowel.	Malignant tumour of prostate gland.
	19	—	Daughter.	1908	Face.	Still living.
I	20	25	Lady.	1894	Womb.	Not found.
J	21	72	Wife of missionary.	1899	Breast.	Scirrhus of mamma.
K	22	49	Lady.	1899	—	Not found.
L	23	—	Dog, aged 4.	1909	—	,, ,,
	24	55	Chemist.	1900	Not in list submitted.	Malignant disease of tongue (6 months) and sublingual and pharyngeal glands (2 months.

In three out of the six houses the occurrence of one death was confirmed; in only one out of four houses the claim of two deaths was confirmed; for one house for which three deaths were claimed only two were confirmed, and for another house for which six deaths were claimed three were confirmed. In the first house with two verified deaths the first death occurred in 1892 and the second in 1911, after an interval of 19 years; in the second house with two verified deaths the first death occurred in 1895 and the second in 1906, or after 11 years; in the only house with three cases the first death occurred in 1896, the second in 1911 (or 15 years later), and the third one year after the second. When the cases are considered as they occurred from year to year, for the years 1892 to 1898, there was one death each year. 1899 and 1900 each had two deaths. The years 1901 to 1906 showed no deaths. 1907 to 1910 each showed one death. 1911 and 1912 had two deaths, and in 1913 and up to the present date there has been no death.

Since wide publicity has been authoritatively obtained for the statements of a cancer street in Ayr, it may be mere justice to point out the true significance of the facts.

The street referred to is broad and contains the best type of residential detached and semi-detached villas with gardens front and back. It runs east and west, so that the fronts of the houses on one side of the street and the backs of the houses on the other side of the road face south. Hence, there is no excuse for attaching significance to the south side as "the shady side" in the way that has been done. On the south side there are 23 houses, on the north side 18, and all the houses are occupied. The householders are mostly retired business men or belong to one of the professions; several are widows. The average age is therefore higher than in other parts of the town. A glance at the table giving the details of the cases claimed as cancer shows the youngest aged 25 and 49 were not confirmed. The age of the youngest verified case is 55, and four alleged cases are aged 80 or above, although only one could be verified. In view of the very small numbers—13 persons in all—it is not advisable to attempt an age and sex distribution; the facts may therefore be stated crudely in the absence of exact information as to the age and sex of each of the inhabitants of the street. The total number of houses is 41, in six of these cancer had occurred over a period of 21 years, there being intervals of 19, 11, and 15 years between the first and second cases in each of three houses, and in the third house a possible third case occurred one year after the second. The total population of the street is 246, or an average of six persons per house. For 21 years this gives a population of 5166 with 13 deaths, or a crude death-rate of 2·5 per 1000. The total deaths in Ayr in 1913 were 44, or 1·3 per 1000. The death-rate for Scotland in 1911 at the age of 45 is 2·04 per 1000, and inquiries on the spot show that 45 is not an under-estimate of the age of the population in the street.

The higher recorded incidence in this street is explained partly by the high age of its inhabitants as contrasted with other areas inhabited by factory hands and miners with young children. The coincidences and accidents inseparable from a disease of such frequency suffice to minimise the significance of the numbers recorded, and by the fact that cancer is more than ten times as frequent at 70 as it is at 30 or 35 years of age.

As sanitation and water have also been incriminated, it may be pointed out that under a very enlightened municipality, the Burgh of Ayr in recent years has entirely rebuilt the whole drainage of the town at a cost of some £120,000, making it as perfect as sea drainage can be. Further, over 800 more or less insanitary buildings have been removed, and all this in a small seaside and residential town of less than 34,000 inhabitants.

The history of how the idea of a "cancer street" originated and became current in the town of Ayr is as interesting and instructive as the manner in which in the course of a few years it acquired the standing of a scientific statement of fact, publication in a leading medical journal, and consequently widespread currency in the lay press as a duly authenticated instance of "cancer houses."

THE TREASURER'S REPORT.

The report of the honorary treasurer, Sir W. Watson Cheyne, for the year ending June 24th, 1914, was a fairly satisfactory one. Unlike last year, he was unable to report any increase in the total receipts for the researches. He said:—

For the first year since 1896 we have received no legacy except a small balance of less than £2 from a legacy received in a previous year, but the receipts again include the sum of £500 which has been paid in advance by Mrs. Streatfield as part of a promised legacy of £2000. This being the second amount of £500 kindly contributed by her under the conditions of the original scheme, Mrs. Streatfield now becomes a member of the general committee.

The total number who have subscribed to the Fund during the year is 146, as compared with 137 in 1913, but whereas the number of small contributions has increased, those of higher amounts have somewhat declined. It is due to the personal efforts of our President in appealing for new subscribers that there is this increase in the number of subscriptions. On the general principle that legacies may be averaged over a period of years, it is to be hoped that during next year the income from this source will be increased.

The expenditure, including all items, amounted to £6491 6*s.* 9*d.*, being rather less than last year, but as in last year's account an item of £622 appeared for expenditure on fittings, the general working expenditure this year must be said to have increased by about £358. In this sum, however, is included the salary of an additional assistant, Dr. Bullock, who took up his duties in August.

Every care has been taken during the year to safeguard the expenditure, whilst at the same time all the requirements of the general superintendent in regard to the necessities of research have been met.

The total expenditure has exceeded the fixed income of the fund from investments by £1444 18*s.* 9*d.*

THE RESOLUTIONS OF THE MEETING.

The adoption of the report was moved by Sir WILLIAM CHURCH, seconded by Professor SIMS WOODHEAD, and carried unanimously.

Sir RICHARD DOUGLAS POWELL moved, and Sir JOHN TWEEDY seconded, a vote of thanks to the executive committee, sub-committees, and treasurer of the fund. This was carried unanimously.

Sir W. WATSON CHEYNE proposed a vote of thanks to the Duke of Bedford, president of the fund, which was seconded by Sir FREDERIC EVE, and carried unanimously.

The Duke of BEDFORD, in a brief reply, referred to the magnificent services rendered to public health by Mr. Joseph Chamberlain.

MEDICINE AND THE LAW.

A Question of Liability.

IN the Blackpool county court his honour Judge Sturges tried an action recently in which Mr. F. C. Sprawson sued Mr. T. Firth, a theatrical manager, for £17 6*s.* 6*d.* as fees in connexion with an operation which he had performed upon the defendant's wife. The defendant alleged that he was not liable to Mr. Sprawson but to Dr. John Stewart, the patient's medical attendant, upon whose advice Mr. Sprawson had been consulted and had operated. The defendant had, in fact, after the proceedings were commenced, made payments to Dr. Stewart, and a sum of £10 had been handed to Mr. Sprawson and had been paid into court. The defendant in support of his case produced an account from Dr. Stewart for £35, which purported to include the plaintiff's fees. Dr. Stewart in evidence said that he had received two sums of £10 on account, the second of which he had handed to the plaintiff. He denied that he was liable for Mr. Sprawson's fees, or that it was customary for a medical man who advised that a surgeon should be called in to be so liable. Mr. Sprawson said that he had booked the debt to the defendant and not to Dr. Stewart. He had given no authority to Dr. Stewart to collect his fees, and not having done so should not look to him for payment. He had never followed such a course with regard to medical men for whom he performed operations, and it was not customary to do so. For the plaintiff it was argued that in the absence of any authority given by him to Dr. Stewart the plaintiff's position was not affected by Dr. Stewart's act in sending an inclusive account for fees. His honour held that he would take the document produced into account in deciding the case, and he was of the opinion that this being so the defendant's position in looking upon Dr. Stewart as the person to whom the money was to be paid was correct. He was further of the opinion from his own knowledge that there was no certainty of custom such as the plaintiff and Dr. Stewart alleged. He therefore gave judgment for the defendant. It was intimated that there might be an appeal.

A Sham Medical Practitioner Convicted.

At the recent Hants assizes a person whose name was given as Hugh Munro McLeod Mackenzie was convicted upon an indictment charging him with giving certificates of the cause of death without being entitled to do so. The prisoner was stated to possess no medical degree, but to have at one time studied medicine at Edinburgh. He appended to his signature on the certificates the letters B.M., L.R.C.S., L.R.C.P., and the court was informed that a medical man bearing the names given above and now practising in South Africa was the possessor of the degrees indicated. The prisoner had practised in Portsmouth in 1910, but the question of his qualification had been raised and he had moved to Southampton, where the offences charged had been committed, and where he had been placed on the panel under the Insurance Act. Mr. Justice Ridley took into consideration the ill health of the prisoner, and sentenced him to be imprisoned for one month.

An Unqualified Person Pretending to Treat Cancer.

At Altrincham recently an inquest was held upon the body of a woman, 70 years of age, who had suffered from cancer of the breast, for which she had been attended by Mr. H. Lund and Mr. J. R. Wilson, but who had since submitted herself to a man named Clay living at Hebden Bridge. This person gave evidence that he had during the past year "removed five nodules, and that there was a very diminished one left." Into that he injected a solution which he was in the habit of using, after which the woman fainted. He spoke of having his "limitations," and said his treatment applied to "external cancer" only, an "internal development" being beyond his reach. The coroner asked him, "How did you know that the cancer was not internal?" and he replied that he did not know. Mr. Wilson gave evidence that death was partly due to cancer, and might possibly have been hastened by shock and acute cellulitis of the tissues. He had no doubt that the shock from the cellulitis was a contributory cause of death. In any case the woman would probably have died from carcinoma of the breast. The jury said that they felt a "strong suspicion" that death was largely attributable to Clay's treatment, but found, as they had been advised by the coroner, a verdict in accordance with the medical evidence, adding "We think Mr. Clay is deserving of censure and that his profession to relieve, if not absolutely to cure, cancer is a very dangerous proceeding." The coroner appears to have then exhorted Clay to desist from professing to cure cancer, his observations ending with the words "Oh, Mr. Clay, a great responsibility rests upon you, and I do ask you not to do it." Whether the coroner's words, which hardly seem to answer the description of "censure," or the possibility of a verdict of manslaughter ensuing upon another occasion, will deter Mr. Clay remains to be seen. The latter contingency is the one which Mr. Clay would be well advised to consider.

Death under an Anæsthetic and a Difficult Question.

An inquest held recently at the Dorset County Hospital showed how difficult a question may have to be decided by a surgeon called upon to operate in a case where the death of the patient under the operation is likely to ensue and to entail an inquest, and where in the absence of an operation continued suffering for the patient is certain and death, more or less immediate, is at least equally probable. The deceased, C. J. Russell, was a carpenter, 65 years of age, a stout man, well known to the police and the Poor-law authorities where he lived as a heavy drinker for 20 years. He was sent to the hospital from the workhouse suffering from strangulated hernia, which was relieved by treatment, but the patient was very desirous of an operation, as he suffered frequently and considerably. Mr. W. B. Cosens, the surgeon who ultimately decided to operate, had known the man and been aware of his habits for many years, and was very unwilling to operate owing to the obvious danger due to the patient's condition, but was equally of the opinion, as he informed the jury, that if the man left the hospital and had a bout of intoxication strangulation would again take place, with the probable necessity for immediate operation in hopeless circumstances. Accordingly Russell was put to bed for 17 days and every possible preparation made to meet the danger which the administration of the anæsthetic would entail. It was given by the house surgeon, whose qualification and experience for the task were proved by Mr. Cosens, but before the man was thoroughly under its influence dangerous symptoms were observed, breathing eventually ceasing, and in spite of everything that could be done the patient died. The coroner placed the matter fairly before the jury, pointing out that the risk was recognised by the surgeon, but that he acceded to the patient's request for an operation, hoping that he might be able to relieve him from pain. The jury, a member of which showed by an observation that he, too, knew the deceased and his habits, returned a verdict in accordance with the evidence, that "the deceased came by his death through failure of the heart, such failure occurring while the said Charles Russell was under the effect of an anæsthetic properly administered, preparatory to an operation for strangulated hernia."

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE annual meeting of this association was held on July 14th and 15th. During the early part of the meetings Dr. JAMES CHAMBERS, the President, occupied the chair.

Dr. T. B. HYSLOP, the chairman of the committee appointed in connexion with the Mental Deficiency Bill, presented a report which showed that the committee had been concerned with the Elementary Education (Defective and Epileptic Children) Amendment Bill and in the provisional regulations in pursuance of the Mental Deficiency Act. It was hoped that the Mental Deficiency Act Regulations, which came into force in April, would be simplified when re-issued. Several recommendations were made in the report. The Central Association for the Care of the Mentally Defective took the necessary steps to register itself as an incorporated association, and a memorandum of association had been drawn up for submission to the Board of Trade. The composition of the future council had been postponed until next year. Following upon a short discussion, Dr. Hyslop said that difficulties were likely to arise, unless care was taken, from persons with no knowledge of mental conditions seeking to define the borderline between insanity and mental deficiency on the one hand, and on the other between mental deficiency and health. It was for the association to take a definite stand on this point and present a guiding memorandum.

The report was approved, and the committee reappointed to continue its work. The President (Dr. Thomson) and Dr. Bedford Pierce (chairman of the status committee) were appointed to act with the subcommittee of the Board of Control. The consideration of the report of the committee

re the status of British psychiatry and of medical officers was deferred until the following day.

Dr. Chambers, who now retired from the presidency, and the other officers of the association were heartily thanked for their services during the year now ending.

Dr. CHAMBERS then introduced the new President, Dr. David G. Thomson, superintendent of the Norfolk County Asylum.

Dr. THOMSON acknowledged the honour conferred upon him, and announced that the association's divisional prizes had been awarded to Dr. Eager and Dr. Macphail, and the bronze medal to Mr. J. C. Wootton. He then delivered his presidential address, which consisted of a review of the legal and medical arrangements for dealing with the insane during the past hundred years, "a period," he said, "which is given point to by the fact that this is the centenary year of the establishment of the Norfolk County Asylum, the oldest county institution of its kind in the country. Hence the stages in the evolution of treatment of mental alienation find illustration within these walls." Dr. Thomson then traced the origin and progress of the laws relating to the insane. The first legislation in favour of the insane poor was, he said, "Wynne's Act," enacted in 1808, which enabled each county to build and equip institutions out of the county funds, so that parishes on a weekly *per capita* payment could send insane poor to the county institution instead of to gaols, houses of correction or industry, but only a few counties used this permissive power—namely, Nottinghamshire, Norfolk, Lancashire, Yorkshire, and Staffordshire. A special committee of the House of Commons in 1815 took evidence as to the deplorable state of the insane in privately owned madhouses, and even in a few public asylums, and Dr. Thomson gave some lurid specimens of this evidence. The committee's report resulted in an Amending Act, which sought to "enforce" the provisions of the Act of 1808. "But it was not," he said, "until the early years of the reign of Victoria—namely, in 1845—that the Act was passed which has been styled the 'Magna Charta of the Insane,' as it gave them for the first time full legal protection and supervision. Other beneficent forces were also by this time at work, for Dr. Gardiner Hill, of Lincoln Asylum, had begun a great campaign against the use of restraint. His strenuous contention that chains and manacles and other coercive measures were unnecessary and harmful led people to declare that he was himself insane, but his views ultimately prevailed, and for many years mechanical restraint has been abolished, except in occasional instances for surgical reasons. 1841 saw the foundation of the Medico-Psychological Association by a few doctors concerned with the study of insanity, its etiology, prevention, and treatment. The chained lunatic now became a patient. County and borough asylums came into being all over the kingdom, private asylums for the well-to-do put their houses in order, and every institution for the insane was put under the control of the Commissioners in Lunacy. Gradually the view that insanity was a possession of the devil or a metaphysical manifestation not amenable to medicine gave place to the conviction that it had a physical basis like other affections, and this altered view has resulted in great advance of knowledge, for alienists have not been slow to apply the great advances in general medicine to this specialty." Dr. Thomson then alluded to the more recent work of the Medico-Psychological Association, the system of training, certification, and registration of mental nurses; the adoption by six Universities of its recommendations of special post-graduate training and diplomas in psychiatry, on lines similar to those in public health and tropical medicine. "If the association," he said, "had done nothing beside provide better doctors and nurses for mental disorders, its existence would have been justified and its labours gratefully acknowledged by the public." Among the topics more particularly dealt with in this section of the presidential address were the following: the disabilities of asylum medical service and the resulting dearth of candidates; the absence of provision for early incipient forms of mental disorder without the dreaded legal certification and committal to the insane wards of workhouses and asylums; the absence of properly equipped clinics for this purpose for the ante- and post-graduate training of young men in psychiatry; the Mental Deficiency Act; the Elementary Education (Defective and Epileptic Children) Bill; and the unsatisfactory state of the law with regard to crimes committed by insane persons. The address was received with marked favour.

A paper on Intrathecal Treatment of General Paralysis was contributed by Dr. E. MAPOTHER and Dr. E. BEATON, who described the technique which they adopted and discussed whether anatomical inaccessibility of the spirochæta constituted, by itself, a complete explanation of the refractory character of the disease to treatment.

On Wednesday, July 15th, a paper was read on the Detection of a Dysentery Carrier, by Mr. H. SALTER GETTINGS and Dr. ETHEL WALDRON (of Wakefield Asylum). The dysentery bacillus was discovered in the loose stools of a patient who displayed no other symptoms; there had been no blood or slime, and no rise of temperature. There had been one or more cases in her ward for four years, and soon after her transfer to another ward there was a fatal case of the disease. Since 1913 there had been in the asylum 14 cases with five deaths. The bacillus was only found after a patient hunt.

Dr. A. W. DANIEL read a paper on the Undesirable Results Arising from Continued Use of Scopolamine Hydrobromine or Hyoscine. He gave an account of the symptoms, both physical and mental, which followed the administration of the drug. There was great excitement, with visions of members of the patient's family undergoing torture, progressive weakness of legs and arms, and rapid and progressive wasting, so that the loss of weight became serious. Imbeciles showed marked intolerance to the drug, and in any patient repeated injection should be avoided. Morally, the patients having the drug became very untrustworthy and sometimes were suicidal. Withdrawal of the drug, which was the only cure for the symptoms, brought about a speedy improvement and restoration of the body weight.

The association then proceeded to discuss, and for the most part to approve, the Report of the Committee on the Status of British Psychiatry and of Medical Officers of asylums. The report contained the following resolutions:—

That it is desirable that provision be made for the detention of patients in psychiatric clinics for a limited time without certification.

That it is desirable that any form of detention under modified conditions, such as proposed in the Lunacy Bill of the year 1905, should not be confined to private houses, but should be extended to all institutions for the insane and clinics duly approved for the purpose.

That it is desirable that the provision already made for the reception of voluntary boarders into licensed houses and registered hospitals be extended to public asylums and psychiatric clinics.

That the psychiatric clinics be for the reception and treatment of voluntary boarders and notified persons.

That it is desirable that patients be admitted to county asylums direct from their homes without being of necessity taken to the Poor-law institutions—in this way making better use of the existing hospital accommodation at these asylums.

That urgency orders be made to apply to Poor-law cases.

That it is desirable that neighbouring asylums be enabled to establish and maintain joint laboratories.

That it is desirable that a standing committee of the association be formed to be called the "research committee," and to have as its object the encouragement and guidance of original work in psychiatry.

It was agreed to forward copies of the report to the Home Secretary, the President of the Local Government Board, the members of the Board of Control, the chairmen and clerks of asylum boards and visiting committees, and the corresponding officials in Scotland and Ireland, and other persons interested in the subject, at the discretion of the President of the association.

ROYAL COMMISSION ON VENEREAL DISEASES.

AT the forty-sixth meeting of the Royal Commission on Venereal Diseases evidence was given by Dr. Svond Lomholt, surgeon at the Municipal Hospital at Copenhagen, regarding the methods adopted for dealing with venereal diseases in Denmark. The principle has been to provide free treatment and to render it as easily accessible as possible. As early as 1773 a rescript provided for free treatment of all poor persons suffering from venereal diseases in one of the provinces of Denmark, and similar regulations were made from time to time until by an Act of 1874 it was laid down that every person should be entitled to free treatment for venereal disease without regard to his ability to pay. In reality little was done to make this right to free treatment of practical value until 1906, when an Act was passed which

contained a provision compelling the municipalities to arrange easy access for free consultation and treatment for all persons suffering from venereal disease. Since that date, especially in Copenhagen, in which town probably 80 per cent. of the disease occurring in the country is to be found, a great deal has been done. Very complete hospital facilities have been provided, and in addition there are three public consulting-rooms for contagious and venereal diseases, at one of which evening consultations are held. Twelve municipal doctors (two of whom are women) have also been appointed for the purpose of giving free treatment of venereal diseases. The experience has been that patients have shown themselves very ready to take advantage of these facilities. In some directions compulsory measures have been adopted. A doctor treating a case of venereal disease is required to point out all the consequences of the disease, and there is also provision for securing that persons suffering from venereal disease shall continue their treatment. Dr. Lomholt thought that this latter provision had been very useful. A system of confidential notification of venereal diseases is in force. The names and addresses of the patients are not notified, and the cases are identified only by numbers, and the notification is consequently only of use for statistical purposes. Dr. Lomholt has made a critical examination of the published figures, and showed that they could only be accepted with a good deal of reserve.

Mr. Charters J. Symonds, consulting surgeon at Guy's Hospital, giving evidence, laid stress on the need for largely increasing the means available for treating venereal diseases. He thought that existing institutions should be utilised as far as possible, and that these, together with any additional provision which might be made, should be linked up with Insurance Committee areas and with panel doctors. Evening clinics should be provided at every centre. It would be necessary that a scheme of this kind should receive adequate subsidies from the State. Mr. Symonds advocated the formation of a National Society which should supervise the selection of lecturers, the scope of teaching, and the publication of books and pamphlets, with a view to the education of the public respecting venereal disease. Such a society, he thought, should be voluntary and should be ready to assist the Government in any measure of which the Government approved. He would propose that the Royal Society of Medicine should nominate persons to serve as a committee of this national society, and that a definite sum of public money should be placed in the hands of that committee. With regard to the question of notification, Mr. Symonds said that the experience of other countries showed that in the present state of mind of the people notification was ineffective; it led to greater concealment of disease and tended to drive sufferers to quacks' treatment. He thought there could be little doubt that notification would help towards suppression of disease, but it was necessary to wait until people had become educated in the matter; the demand for notification and international action might then come from the great mass of the population of this and other countries.

Mr. Arthur J. Evans, honorary surgeon to the Liverpool Stanley Hospital, was of opinion that if better facilities for treating venereal diseases could be provided at the general hospitals the spread of the infection would be reduced. The establishment of such a clinic to a hospital should, he thought, be financed and controlled by the State and not by the representative of the charitable public. Mr. Evans stated that in his capacity as visiting surgeon to the Brownlow Hill Poor-law Infirmary a very large number of venereal cases were brought to his notice. He thought that in Poor-law patients the general percentage of the later manifestations was very high. In the male sex this was exceedingly striking, and in a larger number of cases permanent incapability of earning a livelihood was produced; many also were beyond any hope of benefit even by modern treatment. A great difficulty in regard to Poor-law patients arose from the fact that there was no law to compel these patients to remain till properly cured; patients frequently left the hospital while still in an infectious state. As medical adviser to an important shipping company, Mr. Evans said that it was his experience that a great deal of venereal disease was introduced from abroad, and it was his opinion that this continuous introduction of disease into this country should undoubtedly be brought under control. He recommended that the Board of Trade should take steps to warn and explain to seamen and others dangers of contracting venereal disease, and the danger of infecting others of the community. The importation of disease would, he thought, be greatly lessened if sailors were aware of the risks encountered in foreign ports, and especially in the tropics.

JUNE AT HOME AND ABROAD.

At Home.

JUNE, although subject to sudden lapses into a chilly spring temperature, after violent local thunderstorms, was one of the brightest months on record, and was also generally dry, when the total amount of rainfall is considered, while the hot and cold spells so counterbalanced each other that the mean temperature for the whole month differed very little from the average. In London, at all events in the southern and south-western districts, the chief meteorological event was the violent and fatal thunderstorm that occurred on Sunday, the 14th. During its passage certain localities had more than a month's rainfall within three hours, while others had a mere sprinkle. The heaviest falls were at Wandsworth, Wimbledon, and Richmond. In Richmond Park Sir Frederick Treves measured as much as 3·7 in., and this appears to be the greatest quantity at any given spot. At the Kew Observatory the amount was only 1·3 in., and the aggregate for the month, 1·96 in., was 0·29 in. less than the normal. The Kew temperature, which was rather low during the earlier days of the month, became very high after the middle and again towards the end, and the mean maximum equalled 69°, against an average of 68°, while the mean minimum of 51° was identical with the normal. None of the night readings were very low and none oppressively high. The highest afternoon maximum occurred on the 30th, the figure being 84°, and the lowest, only 56°, was recorded on the 8th. Every day but the 6th brought its share of sunshine, and the total number of hours was no less than 256, which represents rather more than two hours per day above the normal. The more central districts of London were also very sunny; at South Kensington the figure was as high as 258 hours. On the south coast the records were naturally higher; at Brighton and also at Ventnor the total was 280 hours. The Midlands, as represented by Bath and Nottingham, had a temperature about the same as Kew, but at Harrogate and Buxton the readings were a few degrees lower, the mean maximum being 64° and the mean minimum 47° at both resorts. Neither Bath nor Nottingham was so bright as London, but their sunshine was greatly in excess of the average. Some of the great cities of the north recorded as much as the more southern districts do during an average June. At Glasgow there were 190 hours, and at Manchester 192 hours. On certain parts of the south-west coast the temperature was lowered by sea fogs, and the same phenomenon seriously interrupted the sun's record. At Newquay and the Scilly Isles the sunshine was no more than 207 hours, but at Torquay it was as high as 261 hours. Torquay had a mean maximum temperature a degree lower than Kew, and a mean minimum 2° higher. At the Scilly Isles the corresponding figures were 61° and 53°. Over the south and south-west of England generally the weather was too dry. In some parts of Hampshire and Dorset the total rainfall was less than half an inch, and at Torquay it barely exceeded three-quarters of an inch. The Channel Isles were also very dry; at Jersey the rainfall was rather less than half an inch against an average of 2·09 in. Sea fog also intercepted much of the sunshine, with the result that Jersey's total was below the normal by 14 hours, the aggregate figure being 225 hours.

Abroad.

The weather on the continent was generally dry and fine, but the rain, when it did occur, was often heavier than in this country. At Paris the total fall was 2·7 in., while in many other parts of France, where thunderstorms were rife, it was larger. At Biarritz it amounted to 6·8 in. Paris had more hot days than London, and the mean maximum temperature was 71°. The mean minimum, however, was the same as at Kew. Brussels had the same mean afternoon warmth as Kew, while at night the temperature was 2° lower. The relatively low minimum was due to

some very cold nights early in the month. In spite of some outbursts of great heat in Germany the mean maximum temperature at Berlin was no higher than at Paris, although the mean minimum was 3° above that at the French capital. Only 10 or 11 days were at all rainy, but the aggregate fall was rather large, amounting to more than 3 in. The west and south-west of France underwent some great changes in temperature. From time to time the shaded thermometer nearly touched 100°, but as a whole the month was not particularly warm. At Biarritz, where the temperature was 91° on the 3rd, the average maximum was no higher than at Kew. On as many as five days there was no greater heat than 59°. The nights were with very few exceptions warm, and the mean minimum was as high as 55°.

The most sudden change of temperature of the month, which came on the 8th or 9th, was much less felt on the continent than in this country, where a strong northerly wind, reaching the velocity of a gale over a considerable area, sent the thermometer down to the level of early spring for a time. As a whole there was little wind, and the general movement was from some point between west and north rather than from between south and west, such as occurs during an average June.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 8744 births and 4018 deaths were registered during the week ended Saturday, July 18th. The annual rate of mortality in these towns, which had been 12·1, 12·7, and 11·5 per 1000 in the three preceding weeks, slightly rose to 11·6 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·8, against 13·1 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 3·7 in Ealing, 4·6 in Walthamstow, 4·9 in Devonport, 5·2 in Ilford, and 5·6 in Eastbourne, to 16·9 in South Shields, 17·2 in Preston, 17·7 in Middlesbrough, 20·1 in Blackpool, and 23·5 in Bootle.

The 4018 deaths from all causes were 18 in excess of the number in the previous week, and included 406 which were referred to the principal epidemic diseases, against 444 and 394 in the two preceding weeks. Of these 406 deaths, 151 resulted from infantile diarrhœal diseases, 110 from measles, 73 from whooping-cough, 34 from diphtheria, 26 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·2 per 1000, and was 0·1 more than the rate in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 79, 116, and 112 in the three preceding weeks, rose to 151 last week; of this number 38 were registered in London, 11 in Sheffield, 10 in Birmingham, 7 in Birkenhead, 7 in Leeds, 6 in Liverpool, 5 in Manchester, and 4 each in Walsall, Bootle, and Newcastle-on-Tyne. The deaths referred to measles, which had been 144, 130, and 139 in the three preceding weeks, fell to 110 last week, and included 35 in London, 21 in Liverpool, 12 in Manchester, 7 in Sheffield, 7 in Leeds, and 3 each in Birmingham, Oldham, and Newport (Mon.) The fatal cases of whooping-cough, which had been 93, 96, and 77 in the three preceding weeks, further declined to 73 last week, of which 19 occurred in London, 9 in Liverpool, 3 in Bradford, and 3 in Leeds. The deaths attributed to diphtheria, which had been 35, 64, and 30 in the three preceding weeks, rose to 34 last week, and included 11 in London, 4 in Birmingham, 3 in Liverpool, 2 in Bournemouth, and 2 in Manchester. The deaths referred to scarlet fever, which had been 30, 23, and 22 in the three preceding weeks, rose to 26 last week; of which 5 were recorded in Manchester, 4 in Sheffield, 3 in Salford, 2 in Liverpool, and 2 in Sunderland. The fatal cases of enteric fever, which had been 13, 16, and 13 in the three preceding weeks, were 12 last week, and included 4 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 2862 to 3109 in the nine preceding weeks, further rose to 3126 on Saturday last; 430 new cases were admitted during the week, against 440, 442, and 414 in the three preceding weeks. These hospitals also contained on Saturday last 1069 cases of diphtheria, 230 of whooping-cough, 33 of measles, and 33 of enteric fever, but not one of small-pox. The 1021 deaths from all causes in London were 101 in excess of the number in the previous week, and corresponded to an annual death-rate of 11·8 per 1000. The deaths referred to diseases of the respiratory system, which had declined from 163 to 111 in the four preceding weeks, rose to 128 in the week under notice, but were 9 below the number in the corresponding week of last year.

Of the 4018 deaths from all causes in the 97 towns, 172 resulted from different forms of violence and 317 were the subject of coroners' inquests, while 1288 occurred in public institutions. The causes of 44, or 1·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Bradford, Newcastle-on-Tyne, and in 58 other smaller towns. Of the 44 uncertified causes of death, 12 were registered in Birmingham, 8 in Liverpool, 3 in Gloucester, and 2 each in Bootle, Warrington, Preston, Hull, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1216 births and 559 deaths were registered during the week ended Saturday, July 18th. The annual rate of mortality in these towns, which had been 13·8, 14·1, and 13·6 per 1000 in the three preceding weeks, further declined to 12·7 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 15·5, against a corresponding rate of 13·8 per 1000 in the 97 large English towns. Among the several towns the death-rate ranged from 10·3 in Kilmarnock, 10·9 in Dundee and in Paisley, and 11·2 in Edinburgh, to 17·0 in Coatbridge, 18·4 in Perth, and 18·9 in Hamilton.

The 559 deaths from all causes were 38 fewer than the number in the previous week, and included 58 which were referred to the principal epidemic diseases, against numbers declining from 67 to 41 in the four preceding weeks. Of these 58 deaths, 18 resulted from infantile diarrhœal diseases, 15 from whooping-cough, 12 from measles, 7 from scarlet fever, 4 from diphtheria, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, against 1·2 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 10, 13, and 10 in the three preceding weeks, rose to 18 last week, of which 11 were registered in Glasgow, 2 in Dundee, and 2 in Aberdeen. The deaths referred to whooping-cough, which had been 18, 12, and 13 in the three preceding weeks, rose to 15 last week, and included 11 in Glasgow and 2 in Falkirk. The fatal cases of measles, which had been 7, 9, and 10 in the three preceding weeks, further increased to 12 last week; 5 deaths occurred in Dundee, 2 in Glasgow, and 2 in Hamilton. The deaths attributed to scarlet fever, which had been 7, 1, and 3 in the three preceding weeks, rose to 7 last week, but showed no excess in any particular town. The 4 deaths referred to diphtheria, of which 2 were recorded in Glasgow, were equal to the average in the three preceding weeks. The fatal cases of enteric fever were registered in Glasgow and Edinburgh.

The deaths referred to diseases of the respiratory system, which had steadily declined from 99 to 61 in the six preceding weeks, further fell to 51 in the week under notice; 21 deaths resulted from various forms of violence, against 33 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 574 births and 371 deaths were registered during the week ended Saturday, July 18th. The annual rate of mortality in these towns, which had been 15·7, 16·2, and 15·9 per 1000 in the three preceding weeks, rose to 16·1 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·0 per 1000; in the 97 large English towns the corresponding rate did not exceed 13·8, while in the 16 Scottish towns it was equal to 15·5 per 1000. The annual death-rate last week was equal to 17·2 in Dublin (against 11·8 in London and 12·8 in Glasgow), 13·5 in Belfast, 14·3 in Cork, 22·8 in Londonderry, 19·0 in Limerick, and 24·7 in Waterford, while in the 21 smaller towns the mean rate did not exceed 16·4 per 1000.

The 371 deaths from all causes were 3 in excess of the number in the previous week, and included 43 which were referred to the principal epidemic diseases, against 47 and 38 in the two preceding weeks. Of these 43 deaths, 14 resulted from measles, 14 from infantile diarrhœal diseases, 6 from whooping-cough, 5 from scarlet fever, 2 from diphtheria, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·9, against corresponding rates of 1·2 and 1·3 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 13, 15, and 10 in the three

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1914.
(Specially compiled for THE LANCET.)

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1914.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	4,516,612	—	2057	745	—	59	1	39	87	6	4	3298	7·6	—	174	24	65	120	12	104	499	1·2	5450	12·6
West Districts.																								
Paddington	142,055	—	32	37	—	—	—	2	13	—	—	84	6·2	—	—	1	4	3	1	3	12	0·9	156	11·4
Kensington	170,817	—	86	14	—	—	—	—	13	—	—	113	6·9	—	—	1	1	2	—	4	8	0·5	185	11·2
Hammersmith	124,750	—	80	9	—	—	—	—	7	1	—	97	8·1	—	—	1	1	2	1	3	8	0·7	144	11·9
Fulham	158,849	—	71	11	—	2	—	—	7	—	—	91	6·0	—	1	1	2	6	1	5	16	1·1	158	10·8
Chelsea	63,791	—	30	7	—	2	1	1	6	—	—	47	7·7	—	—	1	—	1	1	—	3	0·5	70	10·8
City of Westminster	152,346	—	114	12	—	1	—	3	9	—	—	139	9·5	—	—	1	—	3	—	1	5	0·3	167	12·0
North Districts.																								
St. Marylebone	112,892	—	39	23	—	3	—	1	10	—	—	76	7·0	—	—	—	2	1	2	2	7	0·6	128	12·0
Hampstead	86,731	—	28	9	—	2	—	—	4	—	—	43	5·2	—	—	—	1	2	—	—	3	0·4	77	9·8
St. Pancras	212,497	—	113	51	—	3	—	5	19	—	1	192	9·4	—	6	2	2	4	—	7	21	1·0	261	12·8
Islington	324,764	—	120	63	—	7	—	1	18	1	—	210	6·7	—	9	—	5	14	—	8	36	1·2	407	12·8
Stoke Newington	50,454	—	16	3	—	—	—	—	1	—	—	20	4·1	—	—	—	—	1	—	2	3	0·6	61	12·0
Hackney	223,724	—	52	46	—	1	—	4	23	—	—	126	5·9	—	1	—	8	3	—	6	18	0·8	262	12·3
Central Districts.																								
Holborn	45,861	—	18	8	—	—	—	2	4	—	—	32	7·3	—	1	—	—	—	—	—	1	0·2	71	16·2
Finsbury	83,212	—	38	14	—	4	—	1	18	—	—	75	9·4	—	20	—	—	10	—	3	33	4·1	147	18·2
City of London	17,129	—	—	3	—	1	—	—	—	—	—	4	2·4	—	—	—	—	2	—	—	2	1·2	28	17·7
East Districts.																								
Shoreditch	108,869	—	32	17	—	1	—	1	16	—	—	67	6·4	—	22	1	1	8	—	6	38	3·6	184	18·2
Bethnal Green	127,662	—	51	24	—	2	—	1	27	—	—	105	8·6	—	7	—	—	6	—	8	21	1·7	149	12·7
Stepney	273,266	—	129	66	—	4	—	3	24	—	1	227	8·7	—	45	2	10	9	—	10	76	2·9	411	16·4
Poplar	160,222	—	51	24	—	6	—	—	24	1	1	107	7·0	—	9	—	4	3	1	7	24	1·6	241	15·5
South Districts.																								
Southwark	186,941	—	166	35	—	3	—	3	25	—	—	232	12·9	—	5	3	2	4	1	4	19	1·1	260	14·6
Bermondsey	124,213	—	58	28	—	—	—	1	12	1	—	100	8·4	—	16	—	1	3	—	4	24	2·0	194	16·3
Lambeth	296,724	—	150	39	—	3	—	2	17	—	1	212	7·5	—	5	2	2	4	2	3	18	0·6	335	11·6
Battersea	167,338	—	79	18	—	2	—	1	10	—	—	110	6·9	—	2	1	4	6	—	4	17	1·1	191	12·0
Wandsworth	338,998	—	116	33	—	1	—	5	18	—	—	173	5·3	—	4	1	1	7	—	4	17	0·5	315	9·7
Camberwell	262,020	—	141	55	—	2	—	1	19	1	—	219	8·7	—	3	3	5	6	1	5	23	0·9	313	12·4
Deptford	109,182	—	95	26	—	2	—	—	19	—	—	142	13·6	—	7	—	3	—	1	1	12	1·1	125	11·8
Greenwich	96,037	—	32	27	—	1	—	—	11	1	—	72	7·8	—	9	—	3	—	—	1	13	1·4	121	12·9
Lewisham...	172,433	—	75	20	—	5	—	1	6	—	—	107	6·5	—	1	1	2	7	—	1	12	0·7	151	8·9
Woolwich...	122,836	—	45	23	—	1	—	—	7	—	—	76	6·5	—	1	2	1	3	—	2	9	0·8	140	12·2
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

preceding weeks, rose to 14 last week, and comprised 6 in Dublin, 4 in Belfast, 3 in Sligo, and 1 in Lurgan. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 11, 14, and 13 in the three preceding weeks, were 14 last week, of which 6 occurred in Dublin and 6 in Belfast. The fatal cases of whooping-cough, which had been 6, 10, and 5 in the three preceding weeks, were 6 last week, and included 4 in Belfast. The 5 deaths attributed to scarlet fever, of which 3 occurred in Dublin and 2 in Belfast, were equal to the average in the four preceding weeks. The 2 deaths from diphtheria were registered in Dublin, and the fatal cases of enteric fever in Dublin and Belfast. In addition to the above a fatal case of typhus was recorded in Belfast.

The deaths referred to diseases of the respiratory system, which had been 57, 41, and 53 in the three preceding weeks, fell to 41 in the week under notice. Of the 371 deaths from all causes, 123, or 33 per cent., occurred in public institutions and 7 resulted from various forms of violence. The causes of 15, or 4·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 1·1 per cent.

VITAL STATISTICS OF LONDON DURING JUNE, 1914.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the specified diseases was equal to an annual rate of 7·6 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding months the rates were 7·4, 6·3, and 7·5 per 1000 respectively. The lowest rates last month were recorded in Hampstead, Stoke Newington, Hackney, City of London, and Wandsworth; and the highest rates in the City of Westminster, St. Pancras, Finsbury, Southwark, and Deptford. Scarlet fever was rather more prevalent than in the preceding month; the greatest proportional prevalence of this disease last month was recorded in Kensington, Hammersmith, the City of Westminster, St. Pancras, Southwark, Lambeth, Camberwell, and Deptford. The Metropolitan Asylums Hospitals contained 3045 scarlet fever patients at the end of last month, against 3138, 2826, and 2859 at the end of the three preceding months; the weekly admissions averaged 396, against 337, 312, and 376 in the three preceding months. Diphtheria also showed a slightly increased prevalence last month; this disease was proportionally most prevalent in Paddington, St. Pancras, Stepney, Bermondsey, Camberwell, Deptford, and Greenwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1306, 1121, and 1078 at the end of the three preceding months, had risen to 1080 at the end of last month; the weekly admissions averaged 140, against 153, 114, and 130 in the three preceding months. Enteric fever was slightly less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease occurred in Chelsea, St. Marylebone, Finsbury, Poplar, and Lewisham. The Metropolitan Asylums Hospitals contained 40 enteric fever patients at the end of June, against 66, 55, and 39 at the end of the three preceding months; the weekly admissions averaged 8, against 7 and 6 in the two preceding months. Erysipelas was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, and Deptford. The 39 cases of puerperal fever notified during the month included 5 in St. Pancras, 5 in Wandsworth, 4 in Hackney, 3 in the City of Westminster, 3 in Stepney, and 3 in Southwark. The 6 cases of cerebro-spinal meningitis belonged respectively to Hammersmith, Islington, Poplar, Bermondsey, Camberwell, and Greenwich; and the 4 cases of poliomyelitis to St. Pancras, Stepney, Poplar, and Lambeth.

The mortality statistics relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the population of the several boroughs. During the five weeks ending July 4th the deaths of 5450 London residents were registered, equal to an annual rate of 12·6 per 1000; in the three preceding months the rates were 15·2, 13·8, and 12·9 per 1000 respectively. The death-rates last month ranged from 8·9 in Lewisham, 9·7 in Wandsworth, 9·8 in Hampstead, 10·8 in Fulham and in Chelsea, and 11·2 in Kensington, to 16·2 in Holborn, 16·3 in Bermondsey, 16·4 in Stepney, 17·7 in the City of London, and 18·2 in Finsbury and in Shoreditch. The 5450 deaths from all causes included 499 which were attributed to the principal infectious diseases; of these, 174 resulted from measles, 24 from scarlet fever, 65 from diphtheria, 120 from whooping-cough, 12 from enteric fever, and 104 from diarrhœa and enteritis among children under two years of age. The lowest death-rates from these diseases last month were recorded in Kensington, Chelsea, the City of Westminster, Hampstead, Holborn, and Wandsworth; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 174 fatal cases of measles were 14 fewer than the corrected average number for the corresponding period of the five preceding years; this disease was proportionally most fatal in Finsbury, Shoreditch, Stepney, Bermondsey, and Greenwich. The 24 deaths from scarlet fever were slightly in excess of the corrected average number, and included 3 in Southwark, 3 in Camberwell, and 2 each in St. Pancras, Stepney, Lambeth, and Woolwich. The 65 deaths from diphtheria were 33 above the corrected average number; the greatest proportional mortality from this disease occurred in Paddington, Hackney, Stepney, Deptford, and Greenwich. The 120 deaths from whooping-cough were 20 in excess of the corrected average, the highest death-rates from this disease being recorded in Islington, Finsbury, Shoreditch, Bethnal Green, and Lewisham. The 12 fatal cases of enteric fever exceeded by 4 the corrected average number, and included 2 in St. Marylebone and 2 in Lambeth. The mortality from diarrhœa and enteritis among children under two years of age was proportionally greatest in Stoke Newington, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was nearly 11 per cent. above the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon: R. M. Richards to the *President*, additional, for Recruiting Headquarters, temporarily. Staff-Surgeons: W. N. Blatchford to the *Pembroke*, additional, for disposal; and E. F. Ellis to the *Assistance*, vice Richards. Surgeons: F. H. Stephens to the *Victory*, additional, for disposal; A. V. J. Richardson to the *Attentive*; J. H. Burdett to the *Bulwark*; and W. Mearns and A. L. Robinson to the *Pembroke*, additional for disposal.

Surgeon George Murray Levick has been promoted to the rank of Staff Surgeon in His Majesty's Fleet (dated Nov. 21st, 1910).

ROYAL ARMY MEDICAL CORPS.

Lieutenant Basil H. H. Spence is seconded for service with the Egyptian Army (dated June 30th, 1914).

Lieutenant Pierce M. J. Brett is seconded for service with the Egyptian Army (dated July 1st, 1914).

Colonel F. C. Jones has been appointed Assistant Director of Medical Services at Tidworth, Salisbury Plain. Colonel C. Birt has taken up duty as Assistant Director of Medical Services to the Sixth (Poona) Division of the Southern Army in India. Colonel S. Westcott, C.M.G., has joined at Portsmouth.

Lieutenant-Colonel T. H. Corkery has been appointed to the medical charge of troops at Fort Efford and Mutley District, Plymouth. Lieutenant-Colonel C. A. Lane has been appointed to hold charge of the Military Hospital at Madras Cantonment. Lieutenant-Colonel E. M. Pilcher, D.S.O., has taken up duty as Professor of Military Surgery at the Royal Army Medical College, Grosvenor-road. Lieutenant-Colonel M. J. Sexton has been appointed Senior Medical Officer at Wynberg. Lieutenant-Colonel F. W. Hardy has been granted six months' general leave of absence home from Allahabad Cantonment. Lieutenant-Colonel J. J. Russell has been placed under orders for service abroad. Lieutenant-Colonel F. Begbie has joined at Maymyo. Lieutenant-Colonel S. C. Philson has been appointed to hold charge of the Military Hospital at Lucknow Cantonment. Lieutenant-Colonel S. Macdonald has taken up duty as Medical Inspector of Recruits at Headquarters of the Southern Command. Lieutenant-Colonel W. L. Gray has arrived home on leave of absence from Jullundur Cantonment.

Major H. G. Pinches has been appointed to the Military Hospital at Sheerness on transfer from Chatham. Major W. Davis has been transferred from the Military Hospital at Meerut Cantonment to Naini Tal. Major S. W. Sweetnam has been appointed Senior Medical Officer at Sheerness. Major G. M. Goldsmith has been transferred from Lebong Cantonment to the Dublin District. Major J. G. Gill has joined at Devizes. Major D. L. Harding has been transferred from the Military Hospital at Londonderry to Mullingar. Major A. G. Thompson has taken up duty at Honiton. Major H. M. Nicholls has arrived home for duty from Poona Cantonment. Major J. B. Anderson has been appointed Embarkation Medical Officer at Southampton Docks. Major H. W. Long has been transferred from the Military Hospital at Choulston to hold medical charge of the Cavalry School at

Netheravon. Major F. Ashe has been appointed Specialist in Midwifery and Diseases of Women and Children to the Ninth (Secunderabad) Division. Major S. M. Adye-Curran has taken up duty on the staff of the Military Hospital at Sialkot Cantonment. Major J. Hennessy has been selected for advancement to the rank of Lieutenant-Colonel. Major E. V. Aylen has been appointed Senior Medical Officer at Barian. Major E. T. F. Birrell has been placed under orders for service abroad during the coming trooping season. Major A. H. Morris has arrived home on leave of absence from the Military Hospital at Malta. Major J. Powell has been appointed to the Egyptian Army. Major P. MacKessack has taken up duty as Specialist Sanitary Officer at Headquarters of the Eastern Command. Major F. S. Penny has been appointed to hold charge of the Military Hospital at Limerick. Major J. G. MacNaught has joined the Aldershot Command. Major C. R. Evans has arrived home on leave of absence from Malta. Major G. J. Houghton has arrived home for duty from Sierra Leone Protectorate. Major J. C. B. Statham has been transferred from the London District to the Sierra Leone Protectorate. Major L. P. More has been appointed to hold charge of the Military Hospital at Wellington.

Captain R. Storrs has been appointed to the Military Hospital at Winchester. Captain D. G. Carmichael has been transferred from the Military Hospital at Sialkot Cantonment to Cliffden. Captain T. J. Hallinan has taken up duty at Multan Cantonment. Captain G. de la Cour has been appointed for the course of instruction for promotion to the rank of Major at the Royal Army Medical College. Captain C. Scaife has been appointed to the Northern Command on transfer from Belgaum. Captain E. Caddell has been transferred from the Dublin District to the Eastern Command. Captain W. F. M. Loughnan has joined at Hounslow. An exchange on the roster for service abroad has been approved between Captain H. O. M. Beadnell and Captain A. C. Osburn. Captain R. F. O'T. Dickinson has been appointed to the Dublin District. Captain R. C. Phelan has taken up duty in the Irish Command on transfer from Barrackpore. Captain C. H. Denyer has been transferred from the Military Hospital at Agra to the Southern Command. Captain W. K. Beaman has been appointed to the Military Hospital at York on transfer from Malta. Captain O. R. McEwen has been transferred from Multan Cantonment to the Military Hospital at Londonderry. Captain W. W. Browne has been appointed Staff Surgeon at headquarters of the Ahmednagar Brigade. Captain G. P. A. Bracken has joined at Lichfield. Captain S. Field has been appointed to hold medical charge at Queenstown on transfer from Jamaica. Captain F. H. M. Chapman has been transferred from the Military Hospital at Meerut Cantonment to Delhi. Captain A. S. Cane has been appointed to Kirkee. Captain W. E. Marshall has taken up duty at the Military Hospital, Cork, on transfer from Kinsale. Captain W. Byam has joined the Egyptian Army. Captain M. O. Wilson has been transferred from the Military Hospital at Aden to Chatham. Captain W. H. S. Burney has been appointed to Ferozepore. Captain R. A. Bryden has been appointed to hold charge of the Military Hospital at Fleetwood. Captain R. C. Hallowes has joined at Holywood. Captain F. Casement has been transferred from the Military Hospital at Lucknow Cantonment to Edinburgh. Captain P. J. Hanafin has been appointed Specialist in Ophthalmology at Dublin.

Lieutenant A. Hood has been appointed to the Military Hospital at Rawal Pindi Cantonment on transfer from Lichfield. Lieutenant J. H. M. Frobisher has embarked for service in India. Lieutenant H. W. L. Allott has been transferred from the Military Hospital at Lucknow to Bareilly Cantonment. Lieutenant M. Beddingfield has been placed under orders for service abroad during the coming trooping season. Lieutenant B. Biggar has taken up duty at Cairo. Lieutenant T. C. Sproule has been appointed to hold medical charge at West Down Camp, Salisbury Plain, on transfer from the Military Hospital at Taunton. Lieutenant H. N. Sealy has joined the Belfast District.

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers of the Indian Medical Service:—Lieutenant-Colonels to be Colonels: Hormasjie Eduljie Banatvala (dated April 2nd, 1914). Percy Charles Hutchison Strickland (dated May 15th, 1914).

Surgeon-General C. P. Lukis, K.C.S.I., Honorary Surgeon to His Majesty the King, has been appointed to officiate as Sanitary Commissioner with the Government of India during the absence on leave of the Honourable Major J. C. Robertson, C.I.E.

Colonel A. O. Evans, Inspector-General of Civil Hospitals in Burma, has been granted combined leave of absence home for eight months. Colonel C. J. Bamber, C.V.O., on return to duty from leave of absence, has been appointed Inspector-General of Civil Hospitals in the Punjab, vice Lieutenant-Colonel G. F. W. Braide, officiating.

Lieutenant-Colonel G. McIver Smith, civil surgeon at Ludhiana, has been selected for appointment as Civil Surgeon at Murree Cantonment. Lieutenant-Colonel D. M. Davidson, civil surgeon at Lahore, has been granted three months' leave of absence.

The services of Major M. Corry have been placed temporarily at the disposal of the Government of India for employment in the Delhi Province. Major J. G. G. Swan, civil surgeon at Jhelum, has been selected for appointment as Civil Surgeon and Professor of Forensic Medicine and Toxicology at the Medical College, Lahore, vice Lieutenant-Colonel D. M. Davidson, granted leave of absence. The services of Major M. MacKelvie have been placed at the disposal of the Government of Bengal. Major H. M. Melhuish, on return from leave of absence, has been appointed as Plague Medical Officer at Gurgaon. Major E. L. Perry has been appointed to officiate as Sanitary Commissioner of the Punjab. The services of Major R. McCarrison have been replaced at the disposal of the Foreign Department. Major W. Glen Liston has taken up duty as Director of the Bombay Bacteriological Laboratory. Major W. R. Battye has joined at Mewar as Residency Surgeon. Major H. J. Walton has been appointed Professor of Pathology at King George's Medical College, Lucknow. Major J. R. J. Tyrrell has been appointed Civil Surgeon at the Khyber. Major F. P. Mackie has been granted three months' privilege leave of absence.

Captain C. I. Brierly has been selected for appointment to hold civil medical charge at Peshawar. The services of Captain N. G. McVean have been placed at the disposal of the Government of Bombay for employment in the Civil Medical Department. Captain C. H. Cross has joined at Madras. Captain A. N. Dickson has been appointed to officiate as Agency Surgeon at Maskat. The services of Captain C. E. Palmer have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh for employment in the Jail Department. Captain J. B. D. Hunter has been granted an extension of leave of absence home from India. Captain L. Cook has been appointed to officiate in civil medical charge at Champaran. Captain J. Kirkwood has taken up duty as District Medical and Sanitary Officer at Canara. Captain D. P. Goll has joined the Civil Medical Department of Bengal Presidency. Captain R. Kelsall has been granted leave of absence. Captain L. B. Scott has been appointed Civil Surgeon and Superintendent of the Prison at Sylhet, Assam. Captain H. G. Stiles Webb has taken up duty as Chief Malaria Medical Officer in the Punjab. Captain J. P. Cameron, superintendent of prisons at Madras, has been appointed Superintendent of the Central Prison at Coimbatore. Captain A. H. Napier has been appointed to the Bacteriological Department for duty at the Central Research Institute at Kasauli. Captain C. Newcombe has been appointed to the Chemical Examiner's Department for duty at Calcutta. The services of Captain S. C. Chuckerbutty have been placed at the disposal of the Assam Government.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Eben S. B. Hamilton to be Captain (dated June 29th, 1914).

Lieutenant William Crymble to be Captain (dated July 13th, 1914). Lieutenant Alexander J. Gibson and Lieutenant Thomas W. Wylie are confirmed in their rank. Cadet Corporal George Perkins, from the Oxford University Contingent, Officers Training Corps, to be Lieutenant (on probation) (dated May 20th, 1914).

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: The order of precedence of the undermentioned Captains whose appointments were announced in the *London Gazette* of May 15th, 1914, to be as now shown: John Munro Dupont and Henry Norman Barnett.

East Anglian Clearing Hospital, Royal Army Medical Corps: William Redpath to be Lieutenant (dated July 18th, 1914).

Wessex Clearing Hospital, Royal Army Medical Corps: Alfred John Hopkinson Iles to be Lieutenant (dated June 9th, 1914).

3rd South Midland Field Ambulance, Royal Army Medical Corps: Henry James Drew Smythe to be Lieutenant (dated June 18th, 1914).

Attached to Units other than Medical Units.—Lieutenant Robert Henry to be Captain (dated July 9th, 1914). Lieutenant-Colonel and Honorary Surgeon-Colonel David Lennox resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 22nd, 1914). Captain Thomas Harper resigns his commission, and is granted permission to retain his rank and to wear the

prescribed uniform (dated July 22nd, 1914). Captain George B. Gill resigns his commission (dated July 22nd, 1914).

EXAMINATION FOR PROMOTION TO STAFF-SURGEON, R.N.

At the recent examinations held at Greenwich and London the following surgeons qualified for promotion to the rank of Staff-Surgeon: George M. Levick, Arthur T. Rivers, Thomas R. L. Jones, Kenneth H. Hole, Gilbert F. Syms, Hugh F. Briggs, Michael P. Fitzgerald, James Barrett, Gordon A. Jackson, Alfred G. Malcolm, Horace C. Devas, and Harry W. Nichols. Two of these officers—Surgeon Hole and Surgeon Syms—obtained first-class certificates, thus becoming eligible for accelerated promotion to the extent of 12 months' seniority.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on July 14th, Inspector-General W. Harris Lloyd in the chair, the sum of £52 was distributed among the several applicants.

ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

(FROM OUR OWN CORRESPONDENT.)

THE sixty-fifth annual meeting of the American Medical Association was held in Atlantic City from June 22nd to 26th, and proved a highly successful gathering. Atlantic City, the popular New Jersey seaside resort, is well adapted for a meeting of this character, being situated at convenient distances from the principal cities of the eastern part of the United States, and containing ample accommodation for visitors. It is also provided with buildings admirably suited to the holding of meetings. For these reasons the attendance of medical men was larger than at any previous meeting, and from the medical and scientific standpoint the papers read were, generally speaking, of a high standard.

Opening Meeting: Presidential Address.

At the opening meeting of the house of delegates Dr. JOHN A. WITHERSPOON, of Nashville, Tenn., the retiring President, apologised for not having, through ill-health, been able to prepare an address, and the various reports were then received. Among these was that of a committee appointed to advise on an invitation from the British Medical Association to hold a joint meeting in Cambridge from July 6th to 10th, 1915. The committee held that the invitation would have to be declined, as the constitution and by-laws of the American Medical Association provided that the annual meeting should be held at some place in the United States, but suggested that the British body be invited to meet with the American body at the earliest date possible.

On Tuesday, June 23rd, at a general session, a gold medal in the name of the American Medical Association was conferred on Surgeon-General William C. Gorgas in recognition of his labours to render the Isthmian Canal zone healthy, thus making it possible to build the Canal.

Dr. VICTOR C. VAUGHAN, of Ann Arbor, Michigan, the President for the year, then delivered his address, in which he reviewed the service of medicine to civilisation. "We boast," he said, "of a great civilisation, but this is justified only within limits. Science more nearly dominates the world than at any time in the past. Learning permeates the masses more deeply, but credulity and ignorance are widely prevalent. In this country of nearly one hundred millions there are thousands whose greed impedes the progress of the whole, tens of thousands whose ignorance retards their own growth, and other thousands who live by crime and procreate their kind to live on generations to come. We have our schools, colleges, and universities, but our almshouses, insane asylums, and penal institutions are full. In our cities we see the palatial homes of the ultra rich, the splendid temples of trade and commerce, the slums of want and poverty, and the homes, both rich and squalid, of vice and crime. No nation in this condition can be given a clean bill of health. Our hill-tops are illuminated by the light of knowledge, but our valleys are covered by the clouds of ignorance. We have not emerged from the shadows of the dark ages. The historian of the future will have no difficulty in convincing his readers that those who lived at the beginning of the twentieth century were but slightly removed from barbarism; he will tell that the school, saloon, and house of prostitution flourished in close proximity; that the capitalist worked his employees under conditions which precluded soundness of body; that the labour union man dynamited buildings; that whilst we sent missionaries to convert the Moslem and Buddhist 10,000 murders were committed in our midst; and that a large percentage of our mortality was due to preventable disease."

Papers read in the Sections.

In the Section on Obstetrics, Gynæcology, and Abdominal Surgery a symposium on surgery of the large intestine was held. Dr. WILLIAM J. MAYO, of Rochester, Minn., contributed a paper dealing with resection of the first portion of the large intestine and the resulting effect on its function. He said that in the past too much importance had been attributed to purely incidental changes in the position and attachment of the large intestine, bands, kinks, and adhesions of a normal character being thus given a fictitious rôle in the production of symptoms. The results of resection were good in suitable cases, patients who showed exaggerated conditions of cæcocolic stasis being relieved of these conditions. Among his own operations of this character there had been no deaths.

In the section on Surgery Dr. JOSEPH BLOODGOOD, of Baltimore, in a paper entitled "The Relations of the Surgeon to the Conquest of Cancer," assigned the mortality from cancer chiefly to ignorance or fear of operation, which led to delayed or bad treatment. He was in favour of a diffusion of information among the medical profession and the public through the lay and medical press. This information should be under the absolute control of responsible medical authority. He emphasised the importance of early thorough operation. The difficulty of making an early diagnosis must be met by the physician.—Mr. EDRED M. CORNER, surgeon to St. Thomas's Hospital, London, discussed the importance of the crucial ligaments in injuries of the knee-joints.[1] He believed that many injured ligaments had been overlooked, which accounted for poor functional results after fracture. He showed diagrams on the screen of fractured spines of tibiæ, and believed them to be overlooked occasionally. Portions of torn ligaments and periosteum sometimes became free bodies wi hin the knee-joint.—Dr. J. B. MURPHY, of Chicago, who discussed Mr. Corner's contribution, stated that it was the first of its kind considered before the American Medical Association.

In the Section on Diseases of Children Dr. F. C. NEFF, of Kansas City, read a paper on the Feeding of Infants with Skimmed Breast Milk. He said he had found that when the fat content was reduced the digestion improved, the emptying of the stomach being facilitated. Only a temporary reduction of the fat might be necessary. Later the child might have an increased tolerance for fat. In cases of severe digestive disturbance, persistent vomiting, or pylorospasm, complete recovery often followed the removal of fat from the breast milk. The method employed by him was to obtain 24 hours' supply of breast milk, which was kept on ice, the supply of the previous 24 hours being used for feeding. The milk was placed in a rubber-stoppered bottle with a tube at the bottom for withdrawing the milk without the fat. In this way the reduction of fat could be measured.

The following officers were elected for the coming year. President, Dr. H. L. Rodman (Philadelphia); Vice-Presidents, Dr. E. S. Fairchild (Kansas City, Mo.); Dr. D. Misner R. Townsend (New York); Dr. Alice Hamilton (Chicago); Dr. William E. Darnall (Atlantic City, N.J.); Secretary, Dr. Alexander R. Craig (Chicago); Treasurer, Dr. William Alan Pusey (Chicago).

[1] THE LANCET, May 9th, 1914, p. 1317.

CENTRAL LONDON THROAT AND EAR HOSPITAL AND THE CLINICAL CONGRESS OF SURGEONS.—We are asked to say that the medical staff of the Central London Throat and Ear Hospital, Gray's Inn-road, W.C., will welcome their American *confrères* at breakfast at the Great Northern Railway Hotel, King's Cross, at 9 A.M. on Thursday, July 30th, and afterwards, at 10 A.M., at a demonstration of interesting cases at the hospital. Cards of invitation will be sent on application to the Dean.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

MANCHESTER.

New Central Branch of the Royal Infirmary, Manchester.

THE Central Branch for Accidents and Out-patients of the Royal Infirmary, which has been built in a convenient situation in the centre of the city and which has cost £25,000, will be opened in a few weeks. The buildings are practically complete, and they are now being furnished. On the ground floor is a large vestibule from which there open rooms for consultation and for the examination of out-patients, medical and surgical. The several rooms have communicating doorways, so that the medical officers need not pass through the vestibule to reach an adjacent room. There is a special accident room, in addition to two rooms each with two beds for cases requiring observation. On the same floor there is an X ray installation and an operating theatre.

A Babies' Hospital.

Arrangements have been made by the medical women of Manchester for the provision on a small scale of a babies' hospital for the more effective treatment of babies and very young children suffering from diarrhœa and other gastro-intestinal disorders. It is felt that in a general hospital it is not always possible to give that attention to those cases which is necessary, while there is but little accommodation for nursing babies. To begin with, the number of patients at any one time in the hospital will be limited to 12. A house has been secured, and it is estimated that the cost of carrying out the scheme for the first year will be £800. Of this amount a lady donor has offered £300 if the expenses for opening on August 1st are secured.

Blackpool Hospital Dispute.

The regrettable dispute between the honorary surgeons and the board of management of the Blackpool Victoria Hospital has entered on a new phase. The dispute began last year and has continued ever since. The nurses' dietary has been rectified; the matron has voluntarily tendered her resignation and a new matron has been appointed. Six in all of the honorary medical staff have resigned. The doctors made a suggestion regarding a medical member of the board of management which has not been acted on, hence the trouble. The medical staff called for the resignation of this medical man from the board of management. Last night, Dr. Buckley presiding, a meeting of medical practitioners of Blackpool was held, and a proposal to found a cottage hospital was adopted unanimously, and enough money was guaranteed at the meeting to set the undertaking agoing. Mr. R. H. W. Dunderdale will for the present act as secretary and treasurer. The hospital will be used to deal with acute surgical emergencies amongst the medical practitioners' own cases.

A Manchester Man for the Antarctic Expedition.

Dr. Alexander H. Macklin has resigned his position as senior house surgeon at the Blackburn Infirmary on his appointment as one of the surgeons in Sir Ernest Shackleton's forthcoming Polar expedition. Dr. Macklin graduated in medicine at Manchester in July, 1912.

July 21st.

BIRMINGHAM.

Milk-supply.

THE public health committee is issuing a circular drawing the attention of farmers and milk dealers to the necessity of taking care to ensure that the milk is free from contamination. The following is the suggested method of milking to secure greater cleanliness: (1) The cows and cow-sheds to be kept clean; (2) all long hairs on udders and flanks of cows to be kept short by clipping; (3) cows' flanks to be damped with a brush and their udders wiped clean with a wet cloth before milking to prevent dust and dirt from falling into the milk; (4) milkers to wash their hands with soap and water before milking and to wear clean overalls; (5) a covered milking pail to be used with an opening in the side; and (6) the milk to be immediately removed from the cow-shed into a clean dairy and passed through a strainer and cooled. Bacteriological experiments have been made recently in Birmingham at four good dairy farms. The number of germs in 1 c.c. after two hours in milk obtained by ordinary methods varied from 360 to 147,500, the average being 41,312. With the special method they varied from 140 to 400, and the average was 234. The health committee has also issued a circular to shopkeepers who sell feeding bottles appealing to them to stop the sale of bottles with long tubes in the interests of the community.

The City Sanatorium.

The opening of the new buildings of the City Sanatorium, Yardley-road, by the Lady Mayoress will take place on July 24th. Sir Robert Philip will give a short address.

July 22nd.

SCOTLAND.

Meeting of the Royal Institute of Public Health.

THE annual meeting of the Royal Institute of Public Health commenced in the Usher Hall, Edinburgh, on Wednesday evening, July 15th, when the President of the congress, the Marquis of Linlithgow, delivered the opening address before a distinguished audience. The address, which was listened to with attention, dealt with the difficulties, technical, political, and economic, with which science had to contend in combating the great public health problems of the day, and called attention to the need for educating public opinion. At the close of the address Lord Linlithgow was admitted to the honorary Fellowship of the institute and Lord Provost Inches to honorary life membership. The medal of the institute for conspicuous service in the cause of preventive medicine was awarded to Dr. James Niven, medical officer of health of Manchester, for his work in the direction of the prevention of tuberculosis. The work of the congress was continued until Monday, July 20th, when the proceedings closed by a public lecture delivered by Dr. Otto Neustatter, of Dresden. The congress was attended by a large number of prominent medical men and sanitarians.

Health of Aberdeenshire: Annual Report of the Medical Officer of Health.

Dr. J. P. Watt, medical officer of health of the county of Aberdeen, states in his annual report for 1913 that emigration from the county has received

a check, its trend also having been deflected somewhat from Canada to Australia and New Zealand. The birth-rate for the county, as estimated by the Registrar-General, was 24·082 per 1000, and the illegitimate birth-rate was 18·2. The death-rate was 13·770 per 1000 on the Registrar-General's population. The death-rate of children under 1 year of age was 94·4 per 1000 births. The death-rate from tuberculosis was at the rate of 720 per million, as compared with 801 for 1912. Dr. Watt notes that from a paper published by Dr. A. K. Chalmers, medical officer of health of Glasgow, the death-rate from phthisis would appear to have fallen in Aberdeenshire from 2210 deaths per million in 1860–62 to 898 deaths per million in 1908–10, a fall of 59·4 per cent. In 1860–62 Aberdeenshire came twenty-second in the list of Scottish counties with the lowest death-rate from phthisis; in 1908–10 it came sixth, the counties having less deaths per million persons from consumption being Peebles, Fife, Wigtown, Haddington, and Berwick.

Appointment to Chair of Chemistry at Aberdeen University.

Mr. Frederick Soddy, M.A., F.R.S., was, at a meeting of the Aberdeen University Court held on July 14th, unanimously appointed to the chair of Chemistry in that University, rendered vacant by the resignation of Professor Japp. Mr. Soddy, who obtained a first class in the Honours School of Natural Science, Oxford, in 1898, went to Montreal as a demonstrator in the Chemical Laboratory at McGill University, where for three years he worked, largely in conjunction with Professor Rutherford, carrying on a combined chemical and physical investigation of radio-active phenomena. The result of this joint work was the general interpretation of radio-activity by the theory that the atoms of the radio-elements are undergoing spontaneous disintegration. Subsequently he was associated with Sir William Ramsay in London, and worked also at the Cavendish Laboratory, Cambridge, with Sir J. J. Thomson, with results too well known to need enumeration. In 1904 he was appointed to the newly instituted independent lectureship in physical chemistry in Glasgow, where he has remained until now, accomplishing much, working chiefly on the problems which surround the origin of radium.

Death of Dr. Alexander Reith.

Dr. Alexander Reith died at his residence, Aberdeen, on July 16th. He was a well-known practitioner in Aberdeen, and was a native of that city, having graduated M.D. at Marischal College in 1859. For some time subsequently he practised in England and France, and on his return to Aberdeen he acquired the practice of the late Dr. Erskine. Dr. Reith, who was highly respected by all who knew him, was of a retiring disposition, and spent much of his spare time in mechanical pursuits. He was a widower, and is survived by three sons and three daughters.

Anthrax at Buddon Camp: Territorial Attacked.

A case of anthrax was discovered at Buddon Camp on Wednesday of last week, the victim being one of the members of the 2nd Battery, 1st Highland Brigade, R.F.A., from Aberdeen. The patient was promptly removed to Aberdeen Infirmary, and all precautions were taken to prevent the spread of the disease. It is supposed that the man contracted the disease before going to camp, as in the course of his occupation he might readily have done so.

July 21st.

IRELAND.

Irish Medical Committee.

AT a meeting of this committee held on July 14th in the Royal College of Surgeons, Dublin, Dr. P. J. Macnamara and Dr. R. J. Johnstone were unanimously re-elected as chairman and vice-chairman. Financially the gross receipts for the year came to £597 0*s.* 4*d.*; the expenditure up to date was £624 10*s.*, which left a debit balance of £27 9*s.* 8*d.* This deficit it was decided to carry forward to next account. The following subcommittees were appointed:—Finance and executive: M. R. J. Hayes, Dublin; R. J. Rowlette, Dublin; R. M. Blake, Mountpleasant; J. Power, Ardfinnan; W. Doolin, Dublin; J. S. Darling, Lurgan; A. A. McConnell, Dublin; P. J. O'Brien, Cork; and W. J. O'Sullivan, Limerick. Sanatorium: T. J. Kelly, Enniscorthy; R. J. Rowlette, Dublin; J. J. O'Sullivan, Waterford; J. Power, Ardfinnan; M. R. J. Hayes, Dublin; S. Agnew, Lurgan; P. J. Hamilton, Arklow; T. A. Davidson, Belfast; R. P. McDonnell, Dublin; J. Giusani, Cork; L. Kidd, Enniskillen; and D. Forde, Strokestown. Poor-law: G. E. Greene, Ferns; O. P. Kerrigan, Castletown Geoghegan; W. W. Murphy, Inch; T. J. Kelly, Enniscorthy; C. H. Foley, Ardrahan; W. J. Burns, Belfast; T. T. Collins, Ballinasloe; T. Donnelly, Dublin; A. C. Callaghan, Ahascragh; J. J. O'Connor, Queenstown; G. A. Hickey, New Ross; J. M. S. Kenny, Granard; J. F. Fagan, Oldcastle; and P. Donnellan, Castlerea. Hospital: R. J. Rowlette, Dublin; R. J. Kinkead, Galway; G. A. Hickey, New Ross; E. C. Thompson, Omagh; E. W. Allsom, Cork; J. S. Darling, Lurgan; H. T. Warnock, Donegal; R. C. Peacocke, Blackrock; S. Pringle, Dublin; L. Kidd, Enniskillen; W. A. Fogarty, Limerick; J. Cotter, Cork; G. I. Mackesy, Waterford; L. A. Byrne, Dublin; Sir John Lentaigne, Dublin; Sir John Byers, Belfast; Sir Alexander Dempsey, Belfast; Sir Andrew Horne, Dublin; and J. S. McArdle, Dublin.

The Water-supply of Dublin.

The long spell of dry weather has had its effect on the Roundwood reservoir, from which Dublin and most of the outlying townships draw their water-supply. The last dry season was 1911, and in that year the city was in measurable distance of a water famine when rain began to fall. At present the level in the reservoir is 3 feet 3 inches lower than it was on the same date in 1911. In 1893 there was a complete failure, and for several weeks of the autumn of that year the citizens were dependent on a supply drawn from the Grand Canal. The question arises as to why the corporation, after two such warnings, does not make adequate provision. For several years past work has been going on at Roundwood to increase the storage of water, but the progress is very slow, and the city is in danger every dry summer. The irritation felt by the citizens is not allayed by the bland advice which emanates from the waterworks committee of the corporation. The chairman of that body wrote to the press recently requesting water consumers to refrain from unnecessary use of water, and, in particular, from *taking baths, flushing drains*, and watering gardens. It is said that should the Roundwood supply give out the corporation is in a position again to make use of canal water.

Water-supply of Belfast.

The Belfast Water Commissioners, owing to the feared scarcity of water, have been obliged to issue

notices to the public warning them against wastage of water and urging care in its use.

Accident to a Medical Man.

I regret to report that Mr. J. Kean, J.P., of Newry, medical officer for Meigh dispensary district, lies in a very precarious condition in the Newry General Hospital owing to a motor accident. It appears that on the evening of July 16th Mr. Kean with his wife and a friend were returning in his motor-car from Greenore, when in taking a sharp turn in the road the car was overturned and all the occupants were pitched out. Dr. Donegan, of Carlingford, chancing to come on the scene with his motor-car, conveyed Mr. Kean to Newry, where, after being seen by Dr. S. E. Martin, he was taken to the Newry General Hospital in an unconscious state. The latest information is that Mrs. Kean is much better, but that her husband is still in a very critical condition.

July 20th.

PARIS.

Immunisation against Rabies.

Madame Phisalix, who is attached to the Laboratory of Experimental Physiology of the Museum of Natural History, has made an interesting discovery with regard to the neutralisation of the virus of rabies by the venoms of batrachians and snakes. These two viruses appear to neutralise one another and to create an immunity in a subject subsequently inoculated with the virus of rabies. Many rabbits were given by intravenous injection about 10 mgm. of viper venom—a dose double the lethal quantity, as proved at the same time with controls. Six days after the last test the rabbits thus treated were trephined and fixed rabic virus was injected under the meninges. Control rabbits treated in the same way without any preventive inoculation were attacked by rabies some hours later. Of six rabbits inoculated with the venom of the salamander, five remained entirely unaffected. Only one, in which 15 days were allowed to elapse between the immunisation and the inoculation with rabies, died rabid. The duration of the immunity conferred by the association of the venom of snakes and batrachians is therefore quite short. Other experiments show its duration to be from three to six weeks, but that it completely disappears by the end of two months. Madame Phisalix has further been able to show that the association of the two venoms is necessary. Rabbits immunised with salamander or viper venom alone showed no resistance to the virus of rabies.

A Committee for the Dissemination of Hygienic Principles.

A committee has been established in Paris, at the suggestion of *Le Matin*, to disseminate information on the laws of hygiene and public health. It comprises Members of Parliament and of the Académie de Médecine, administrative officials, mayors of the *arrondissements* of Paris, and social workers. Three questions are selected for study and will be brought before a congress organised by the various groups. They are: (1) the rôle of the municipalities in the struggle against infant mortality; (2) hygiene at school and in the school; (3) the organisation of hygienic services in the departments. The question of hygiene at school has been made the subject of thorough discussion, and a vigorous campaign is to be undertaken to disseminate the idea that the school ought to be a powerful agent in the diffusion of hygienic knowledge throughout the world. Dr. Méry has been entrusted with the report on the first question, Dr. Mosny with that on the second, and Dr. Hott, of Rouen, with that on the third.

The Story of a Statue.

For more than 60 years a statue of Ambroise Paré presided silently over the meetings of the Société de Chirurgerie. But it was made of plaster, and one day a clumsy servant knocked it over and shattered it into a thousand pieces. Some weeks later Dr. Robert, medical inspector of the Army Sanitary Service, was shocked to find empty the place which belonged to the father of French surgery. He searched and found another statue of Paré, and in order to prevent a like disaster he had it cast in bronze, after which he generously offered it to his colleagues. A little informal ceremony was made of this occasion, when Dr. Tuffier, president of the society, complimented the donor, alluded to the close connexion between civil and military medicine, and praised the members for their loyalty to their ancestor.

An Anti-Opium League.

A league is being formed in Paris to combat the spread of the opium habit which, in addition to the ravages that it has made among the Asiatic colonies, is now spreading among the students and in literary circles where intellectual refinement contributes to the perversion. This league has for its honorary presidents Professor Charles Richet, member of the Academies of Science and of Medicine, and M. Le Myre de Villiers, senior Governor-General of French Indo-China. The acting president is Dr. Janselme, professeur agrégé of the Paris Faculty of Medicine, who is well acquainted with the East, and the secretary-general is Dr. Millant. The league proposes to enlighten the public, by means of pamphlets and meetings and other methods of publicity, upon the dangers of using narcotic drugs in general, for the fight against cocaine is included as an addition to the programme. It intends to wage energetic warfare against the traffickers in poison who swarm in Paris and in the naval ports.

A Forthcoming Congress.

The next Congress of the French Association for the Advancement of Science will be held this year at Havre from July 27th to August 2nd. It will have on this occasion a special *éclat* because of the connexion with the British Association, from which body a large number of scientists have accepted the invitation of the French Association and the town of Havre. Professor Armand Gautier will preside over the session, and Professor Albert Calmette, director of the Pasteur Institute at Lille, is vice-president of the Congress.

July 20th.

INDIA.

Lunacy in Bengal.

INTERESTING figures are given in the annual returns of the lunatic asylums in Bengal for 1913 of the cures effected during the year under review. From the proportion of cures given below among the different types of insanity it would seem that the type of insanity associated with Indian hemp smoking yields more easily to treatment than any other type: insanity due to hemp smoking, 14·38 per cent. to total treated; melancholia, 8·42 per cent.; delusional insanity, 6·60 per cent.; and mania, 6·25 per cent. The total expenditure of the lunatic asylums in Bengal in 1913 was Rs.1,94,451.

The Simla Improvement Scheme.

Major J. C. Robertson, Sanitary Commissioner with the Government of India, has proceeded to Aden to

advise the local authorities on their new scheme to improve the water-supply of Aden. Surgeon-General Sir Pardey Lukis, I.M.S., will take his place on the committee appointed by Government to consider the improvement of Simla.

Sanitation in Lahore.

The fourth annual report, prepared by Dr. A. G. Newell, late health officer of Lahore, which has just been issued, shows that the infant mortality rate was 305·3 deaths per 1000 births. Of these infants 41·54 per cent. die within a month of birth, and 18·3 per cent. die within ten days. Much of this waste of life might be prevented by skilled attention at birth and by healthy conditions of food and environment during early days. A little is being done by the municipality, but much more is needed. The fact that more than half the deaths that take place in Lahore are those of children under 15 years of age demonstrates the need for improved sanitary measures. One of these measures which Dr. Newell has long urged is the improvement of the milk-supply. Milk-sellers are already licensed, and their licence is supposed to ensure that the milk is clean and unadulterated, but the regulations are defective. Dr. Newell advocates education of the cow-keepers in cleanliness, and in the proper feeding of cows, the elimination of cows from inside the city, and the establishment of model dairies. Other proposals, in view of the high infant mortality rate, are the appointment of two lady health visitors and the free registration of *dais*, so that the women could be reached and taught the rudiments of asepsis in midwifery. Both these measures would undoubtedly be most beneficial. After infant mortality the prevalence of pulmonary tuberculosis forms one of the most difficult problems before the health officer. This disease caused 630 deaths last year in Lahore, and it is estimated that there are over 6000 cases in the municipal area. The disease is much more prevalent among Mahommedans than among Hindus, and 47·46 per cent. of the deaths were among Mussulman women. Dr. Newell describes the preventive and educational work already being done, and urges the need for the appointment of a lady health visitor to go among the women. Direct instruction in the elements of sanitation is urgently needed, for by this means alone can the advantages of domestic and personal hygiene be brought home to the people.

Madras Town Planning.

It is understood that the Government of Madras have in contemplation a scheme for popularising the latest ideas in town planning and the building of model sanitary dwellings. With this end in view they are proposing to hold exhibitions and demonstrations and courses of lectures in the Presidency during the coming cold weather. This timely proposal will be welcomed by all as a step in the right direction, as a means of educating public opinion, preliminary to undertaking the necessary legislation.

Tuberculosis in Madras.

The Madras Corporation have decided to make tuberculosis compulsorily notifiable throughout the city. The initiative for this action came from the Government of Madras, which in January last requested the corporation to prepare a detailed report on the feasibility of introducing a system of compulsory notification into the city. The report of the city health officer supported the view that compulsory notification was necessary for the control of tuberculosis in this city. He recommended the payment to medical practitioners of 1 rupee fee, and the periodical disinfection of the rooms occupied by the patient. It has now been decided to adopt these measures, which will not, however, come into force before the corporation have provided a sanatorium or farm colony for early cases. In addition, it is proposed to provide hospital accommodation for more advanced cases, to organise stricter supervision of supplies of food and milk, and to attempt to educate both children and adults as to the cause, prevention, and cure of the disease. All these measures are highly practical, and reflect creditably on the business-like way in which Madras is approaching a difficult problem.

Mosquitoes in Ceylon.

According to an advance report of the mosquito survey of the Ceylon port, the investigations throughout 1913 revealed the fact that there were 50 different species of mosquito in Colombo, of which 15 were harmful. Several species were new to science and others not previously recorded either in Ceylon or India. Complete extermination, it is pointed out in the report, is practically impossible owing to the existence of a migratory species retaining its habit of breeding in swamps and natural pools at a distance from the centres of population, but accustomed to fly long distances to cities and towns, to feed on human blood.

June 27th.

Correspondence.

"Audi alteram partem."

ORAL SEPSIS AND THE EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—I spent an hour a week or two ago with a medical man, who was quite a stranger to me, discussing the question "should he allow half his teeth to be extracted" for what had been called pyorrhœa alveolaris. He had already almost determined to content himself with the loss of four incisors. He was a man of nervous temperament, who had spent several recent years of ill-health—chiefly in pyrexial states that had been ascribed to streptococcal infections, for which he had been duly and repeatedly vaccined. But still it seemed that similar illnesses came upon him, and so I suppose his teeth had been pounced upon. I examined his mouth very carefully and his teeth were to my eye perfect; I would not speak positively as to the slightest possible gingivitis, at the edges of the gums, but I could not see it. He had commencing retrocession of the gums. I strongly demurred to the extraction of a single tooth.

Now, Sir, if this had been a solitary experience, however much I might differ from the advice that had been given, I should have nothing to say, but it is not so. In the last year or two hardly a week passes but I see man or woman said to be affected by pyorrhœa which is poisoning them, and where to save their health it is necessary to extract a number of teeth. I have several times heard that the whole lot had been condemned. In many another case a long course of vaccines had been advised or was being carried out, where I really could see nothing of importance in the way

of disease and nothing to excuse such drastic treatment. I have as a result come very reluctantly to the conclusion that a good many of us have lost our heads (it has often happened so in medicine before), and that many are so obsessed by the idea of oral sepsis that they give way to the fanatical, inconsiderate, and reckless advice, that good teeth should be removed wholesale. And what for? For the most trivial ulceration of the edges of the gums that our foretears would have adequately treated by a mouthwash, and thought no more about it.

Everyone will admit that there is wisdom in taking more care of the teeth than has often been done in the past, but dirty mouths are not pyorrhœa, and the deep-seated pent-up suppuration in the alveoli that justifies the term and needs wholesale extraction of teeth is an uncommon disease; it is a painful malady, and I do not think there is much doubt about it when it is present. I have taken some time to consider this opinion, and I daily become more certain that an exaggerated view is too frequently taken of trivial conditions of the buccal mucous membrane, and that a harmful practice has come into vogue that needs to be held up.

I am, Sir, yours faithfully,

July 20th, 1914. JAMES F. GOODHART.

PS.—After the above was written Dr. R. C. Wingfield's paper on Oral Sepsis in Pulmonary Tuberculosis in THE LANCET of July 18th attracted my notice. Being of the nature of a report of an experimental inquiry, it is outside the purpose of my remarks. Nevertheless, I cannot help saying that somewhat of a shudder comes over me as I read that in 30 cases of phthisis, all of them as regards age in the prime of life, the teeth were removed "in bulk" for an assumed oral sepsis that can at best have been only problematical.—J. F. G.

THE TECHNIQUE OF ARTIFICIAL PNEUMOTHORAX.

To the Editor of THE LANCET.

SIR,—I must thank Dr. Clive Riviere for his critical interest in my paper on artificial pneumothorax. His criticisms in your issue of July 18th are numerous and I apologise if my reply is somewhat lengthy. I do not doubt that Dr. Riviere can pass a blunt needle through the parietal pleura so that the orifice rests in the pleural cavity without injuring the visceral pleura. This can be done with a sharp needle provided the point does not project beyond its orifice. What I maintain is that, even if the orifice is in the pleural cavity, he cannot obtain ample manometric oscillations without causing the lung to leak and thereby supply the necessary gas to communicate movements to the manometer. The fact that he does obtain such oscillations is, as I showed, ample proof that he does cause the lung to leak. If he is not satisfied with that proof it is for him to show how he obtains his oscillations or to point out the fallacies in my reasoning. In this connexion let us examine the details of one of his own cases—for example, that of H.B. In this case, at the first operation, he obtained manometric oscillations indicating an intrapleural pressure varying between −4 cm. and −12 cm. of water. Here, on the assumption that the lung did not leak, the maximum volume of gas entering the pleural cavity was equal to that of a column of 6 cm. of the fluid in his manometer. Of this very small volume he apparently thinks 4 cm. could have moved freely in and out through the needle to produce his oscillations. Having obtained these he asked his patient to cough. Am I right in assuming that his manometer then registered a positive pressure? If it did, he could not produce more conclusive proof that air had leaked into the pleural cavity, for a positive pressure could not be produced in his manometer except by more air than was originally present in it. If it did not register a positive pressure, such a disturbance as that caused by a cough was entirely unnecessary and likely to displace the delicately adjusted needle.

But Dr. Riviere does not appear to have considered the possibility of the valve action of the lung, although most readers will have recognised it as a frequent cause of difficulty in aspirating a pleural effusion, but, provided a sufficient quantity of fluid is still present, a difficulty overcome by altering the position of the needle. In reviewing the experiences which I described at the end of my paper—and these I must really credit him with not having appreciated—he apparently failed to see that the suspension of oscillations during the temporary cutting off of the supply of gas from the reservoir was due to this valve action, and offered the explanation that it was due to a synchronous, and therefore temporary blocking of the eye of the needle by a vexatious "piece of punched out skin." However, Dr. Riviere recognises that in some cases gas may fail to return from the pleural cavity through the needle, but suggests that in these cases such gas is "presumably lost among the pleural adhesions"—that is, lost where there is not even a potential cavity. The valve action of the lung seems to me to be a more satisfactory explanation. Gas having leaked into the pleural cavity and being suitably located it will be recognised that no further difficulty is likely to occur, and a subsequent puncture of the chest wall would probably furnish the desired oscillations and allow the operation to proceed satisfactorily. Hence the "misadventure" of puncturing the lung and making it leak would not be apparent and would escape detection. It is only natural, therefore, that Dr. Riviere should find difficulty in recognising and acknowledging it in his practice.

But apart from the question of puncturing the lung, Dr. Riviere criticises the use of the two manometers. I believe that a single manometer was once deemed an unnecessary complication even by pioneers in the practice of pneumothorax, so that I am not surprised that objection should be raised to the use of two. I hardly think that Dr. Riviere would raise his objections if he had had experience of a two-manometer apparatus, and his criticisms perhaps lose weight because he has not. Let us compare the methods of determining whether gas is flowing. With a two-manometer apparatus a mere glance shows immediately whether it is flowing or not. With his single manometer Dr. Riviere says that he pinches the communicating tube between the manometer and the needle—in view of the valve action, often an inadvisable procedure — to see whether the pressure in the manometer rises. This is a clumsy method, only applicable if the flow is rapid. In this connexion Dr. Riviere speaks of the pressure of gas in the gas bottle, the intrapleural pressure, and "the average pressure of the two combined," apparently not recognising that unless the tube between the manometer and gas bottle is throttled the manometer always records the pressure of gas in the gas bottle, and that the recorded pressure

rises when gas ceases to flow because the head of water in the siphon has not now to drive water from the water bottle into the gas bottle. He then somewhat contemptuously denies that the gas pressure ever falls below the intrapleural. I would point out to him that just before he allows gas to flow from the reservoir this occurs with each expiration and every cough, and in consequence, if there is no valve action, gas passes freely into the manometer and produces the positive phase of the oscillation. In first operations fluid instead of gas does occasionally under these circumstances pass into the needle.

I admit that formulæ and calculations are at first sight somewhat forbidding, but only at first sight. I would do the "clinician" and "practical physician" an injustice if I suggested that they could not take two readings and from the lower of these subtract half the difference between the two. As a matter of fact, a very little practice will enable the practical physician to do this automatically as he is observing the readings. I pointed out that it was not necessary for practical purposes to work out any of the "complicated formulæ" to which Dr. Riviere objects. I also pointed out that by closing down the throttle, thereby shutting off the gas, he may, if no valve action occurs, obtain, in the same way as he does with his own apparatus, the "visual proof" of the intrapleural pressure (the reading by the direct method) which he desires. His fear that the inertia of the fluid in the small manometer reservoirs might result in the damping of the oscillations is groundless. This I have shown by placing an ordinary manometer between my apparatus and the needle; also by varying the quantities of fluid in the reservoirs. Curiously enough, the only advantage which Dr. Riviere sees—that is, the advantage regarding the range of working pressure—really does not exist. With regard to oxygen I recommend it because if it passes into the tissues it is readily absorbed and does not produce emphysema to the same extent as nitrogen sometimes does. Whether oxygen entirely eliminates the possibility of embolism I am not prepared to say. Probably, carbon-dioxide would be a better gas. However, except where gas is pumped in under considerable pressure, I believe embolism to be an overrated danger, and, with the indications of the flow and pressures which the two manometers afford and the low reservoir pressure with which I work, a negligible one.

Finally, apart from the actual method of procedure and the question whether the leakage from the lung is serious, the advantages which I claim for my apparatus are available even if the rules necessary when the single manometer is used are observed. The operation is not one to be undertaken lightly, and if the operator is not prepared to make some effort to master a slightly more elaborate apparatus, provided, of course, it is a more efficient one, he has no right to practise the method. I am, Sir, yours faithfully,

London, W., July 20th, 1914. WM. PARRY MORGAN.

To the Editor of THE LANCET.

SIR,—Dr. W. Parry Morgan's paper in THE LANCET of July 11th is a refreshing departure from the hackneyed stuff most of us have been writing on artificial pneumothorax during the last few years. But his paper leaves me scratching my head in an instinctive effort, presumably, to gouge new, mathematically-minded sulci in my cortex. More than a week's respectful contemplation of his formulæ has left me in a state of complete mystification. I do not doubt their correctness, but I dare anyone except a "wrangler," such as Dr. Morgan, to keep them in his head and to ring the necessary changes on them during an operation which, in its simplest form, requires considerable mental alertness. After all, when a case is uncomplicated by pleural adhesions, and the operator has mastered the Forlanini-Saugman technique, the induction of a pneumothorax is straightforward and almost free from danger. When there are extensive adhesions I fear the dangers and ultimate failure of the operation are inevitable in any case. An objection I would raise to the escape of oxygen through the needle as it traverses the chest wall is that it may form a small pocket superficial to both pleuræ, and that manometric oscillations may occur, suggesting that the point of the needle is in the pleural cavity, whereas it is in reality outside. A false pneumothorax may be as great a hindrance to the induction of a true pneumothorax as a false passage in the urethra is to the catheterisation of the bladder. Apart from this objection, to which, no doubt, Dr. Morgan will have a suitable answer, it seems to me that his use of a slow stream of oxygen through the needle as it punctures the parietal pleura must lessen the chance of injuring the visceral pleura and lung. This danger has lately been illustrated by Dr. Begtrup Hansen who, in an attempt to induce a pneumothorax, punctured the chest in the eighth and ninth intercostal spaces. There were no manometric oscillations, and no gas was introduced. The puncture in the ninth space was immediately followed by a violent hæmoptysis, and the patient died a quarter of an hour later. At the necropsy large blood-vessels were found at the point where the lung had been wounded. The heart contained air. Evidently air in the lung had been sucked into a wounded blood-vessel, causing death. If, as I suspect, the pleuræ were adherent, Dr. Morgan's device would not have averted the fatality; but if they were not adherent the wound of the lung would presumably have been avoided. But I still hold that most physicians would do well to confine themselves at first to the simpler technique of the Forlanini-Saugman operation. Simple as this is, I have frequently found it necessary to repeat its demonstration more than once to the same person, and I have even known a patient to be almost suffocated by a mistake in the reading of the simple manometer devised by Professor Saugman. I am, Sir, yours faithfully,

Gorleston-on-Sea, July 18th, 1914. CLAUDE LILLINGSTON.

NURSES' REGISTRATION.

To the Editor of THE LANCET.

SIR,—In your excellent, if I may say so, leading article on Nurses' Registration you write of the Bill: "No woman whose name is not upon this register would be allowed to claim that she has been trained at a hospital and is a qualified nurse." The Bill is bad, but not quite as bad as that. The proposal in the Bill is that no woman should be allowed to call herself a "registered nurse" if she was not on the register, a very different matter—different because it is certain that if the Bill passed a large number of the best nurses would not register, but yet nothing could ever prevent a nurse who has been trained at a hospital from saying so. The opposition is really in no way personal. Dr. W. A. Chapple and the ladies who work with him enjoy a bout at the London Hospital

nurses which does not harm the nurses, gives the hospital a gratuitous advertisement, and me the opportunity of replying. I fear they will leave off doing this soon. But the opposition, as I say, cannot be personal when nearly 500 matrons of hospitals and over 2000 nurses have quite recently signed the protest against it.

I am, Sir, yours faithfully,

London Hospital, E., July 21st, 1914. KNUTSFORD.

CARBOLIC ACID INJECTIONS IN TETANUS.

To the Editor of THE LANCET.

SIR,—I read with interest the description of a case of tetanus treated with subcutaneous injections of carbolic acid by Mr. W. Graham Reynolds in THE LANCET of May 23rd. I mention here a similar case which came under my observation. A native woman, aged about 45, was brought to me on May 15th last for general rigidity of the body with inability to open the mouth. Her husband, who accompanied her, told me that about 25 days previously she met with a bullock-cart accident. The wheel passed over her right foot and the edge of the ornament which she had on her right ankle cut the skin and a large wound of about three inches was made. The wound was dressed on the second day of injury. The husband stated that some six days previously to her visit to me she was unable to bend her neck and body and could not open her mouth properly.

On examination a wound was found below the internal malleolus of the right leg. The wound was about one inch long and healing, and was covered over with healthy granulations. The patient was unable to open her mouth and used to get spasms very frequently. Opisthotonos and risus sardonicus were present. There was general rigidity of the body. Her mental power was normal. The wound was washed with antiseptic lotion thoroughly well and dressed. Intramuscular injection of 2 c.c. of a 3 per cent. carbolic acid solution in distilled water was given, and the injection was repeated every four hours during the day. Daily three similar injections were given. First the injections were given in the buttocks and then in the thighs. Every time the site was changed. The patient's condition was bad for the first three days after admission. The spasms were very frequent and the patient restless. A dose of chloretone (gr. xxx.) was given every night to procure sleep and arrest restlessness. Some improvement was noticed on the fourth day; the spasms were less frequent and the restlessness was found diminished. On the fourth day the dose of injection was reduced from 2 c.c. to 1 c.c., but three injections as usual were given. From this day the symptoms began to diminish and the patient began to improve every day, though the progress was very slow. On the seventh day injections were not given and from this time no more injections were necessary. She was put on bromide and chloral mixture. From the ninth day the general rigidity and the opisthotonos began to diminish. The patient was slightly able to open her mouth on the eleventh day, and then improvement was rather rapid. On the eighteenth day after admission the movements of the neck and body were free to some extent, and the patient was able to take solid food. As the circumstances were such that she would not stay in the hospital longer she was now discharged, but I saw her daily for the next two weeks. Her progress was steady, and by the end of the fifth week she was quite well.

This was not a very severe case of tetanus, and the patient developed symptoms some time after the injury, and they were gradual in their onset. The peculiar interest in this case is that three days' treatment of nine injections brought the spasms under control (though injections were given for three days more in lesser quantities) and then her progress was slow but steady. I think more trial should be given to this method of treatment, and especially in severe cases, before coming to a definite conclusion about the usefulness of the drug.

I am, Sir, yours faithfully,

SHERALI K. NANJIANI, L.M. & S.,
Chief Medical Officer, Rewa Kantha, Chhota Udepur State.
June 24th, 1914.

*** Mr. Graham Reynolds's paper was supplemented in our issue of July 4th by a table of dosage.—ED. L.

To the Editor of THE LANCET.

SIR,—Mr. W. Graham Reynolds's very interesting case of recovery under carbolic acid injections, published in THE LANCET of May 23rd, has led me to analyse the results obtained at the Countess of Dufferin Hospital, Baroda, where treatment by carbolic acid injections has been our routine practice in cases of tetanus for the last two and a half years. Of the 17 cases of tetanus collected 7 died, 4 were discharged as cured, 4 as relieved, and 2 "otherwise." Of the 7 deaths recorded, Cases 3 and 13 died a few hours after admission, Case 10 two days after admission. In Cases 2 and 15 only slight temporary improvement was noted, the patients dying four days after admission. In Case 8 treatment was successful in so far as relieving the tetanic spasms, but the patient was from the start in a very debilitated condition and died from a terminal pneumonia. Case 14 was a very septic case, and died the day after lockjaw developed in the hospital. The cases marked as relieved were taken away by relatives before complete recovery (a practice which in the East one has constantly to put up with). The improvement, however, in Cases 6 and 11 was so great that they could have been classed as cured. Of the cases discharged "otherwise" no improvement at all was noted in Case 16 after 10 days' treatment, and unfortunately no further notes are available, while Case 17 was taken away the day after lockjaw developed. The number, then, is reduced to 13 of the cases in which the treatment could be said to have had a fair trial through the patients not being taken away or dying too soon. Given, then, the chance of a fair trial the treatment may be said to have been completely successful in 6 cases (Cases 1, 4, 5, 6, 11, and 12), to have effected notable improvement in 3 cases (Cases 7, 8, and 9), and slight or no improvement in 4 cases (Cases 2, 10, 15, and 16).

Considering the lateness and the general state of neglect in which most of these patients reach hospital, I think that the treatment may be said to have been subjected to a pretty severe test and to have yielded gratifying results, especially compared to the days when reliance was chiefly placed on antitetanic serum, yielding within my experience a mortality of 100 per cent. Antitetanic serum is now relegated by us to its prophylactic use, and in justice to the serum I must say that so far, and

that may not be pure coincidence, no tetanus has developed in those cases which were given the prophylactic serum. In none of the cases were symptoms of carbolic poisoning noticed.

Chloretone, either per os or per rectum, was the sedative mostly employed in combination with the carbolic acid injections. A case had been reported about two years ago in which recovery from tetanus had been attributed to chloretone alone, but to my mind chloretone possesses no other specific value than that of a useful and harmless sedative. One hears of cases of recovery, sometimes singled out for publication, in which different methods of treatment have been adopted. I believe that under any method of treatment in tetanus there is a certain element of "spontaneous recovery," unfortunately occurring too seldom, but with which one has to reckon before estimating the value of a treatment uncorroborated by a series.

I am, Sir, yours faithfully,

CLIFFORD MAYER, M.D., B.S. Lond., &c.,

June 26th, 1914. Chief Medical Officer, Baroda State.

TUBERCULIN "ENTHUSIASTS."

To the Editor of THE LANCET.

SIR,—I wonder if any of your readers can do anything to check the activities of some of the tuberculin "enthusiasts." I use the word in its original sense. The following is one of several instances of their handiwork. A young woman attended the Brompton Hospital two years ago with symptoms and signs of active pulmonary tuberculosis. She had received much hospital treatment and a prolonged stay in two sanatoria, and I was able to tell her that, in my opinion, the disease was arrested and that she could return to work. She was free from symptoms, and she had neither cough nor sputum; the local signs indicated fibrosis. She was recommended to report herself periodically in any case, and to come to hospital at once if she felt ill. This was on May 14th.

I give the following account of subsequent events as it was reported to me by the patient. A few days after seeing me she received a typewritten letter from the clerk of the Insurance Committee instructing her to attend at a certain dispensary at a certain time. She did so, and was interviewed by the resident officer, who referred her to the "specialist" doctor. The latter said: "I do not know if injections will do you good or not, but we may as well try them." She received 18 injections in a short period, 14 of them on consecutive days. She returned to hospital on July 9th with a temperature of 100° F. at noon, blood-spitting and blood-stained sputum, and copious moist sounds over the affected area. It has been necessary to admit her into hospital without delay.

It is not my object to enter into a discussion concerning the merits—or otherwise—of tuberculin, nor to criticise the method of administration in this case. But it does seem justifiable to consider that a focus of disease, apparently arrested, was fanned into flame by the treatment. The possible sacrifice of a woman's life may not appeal to the official mind, but surely the destruction of benefits, obtained by a long and expensive treatment, will seem, even to an insurance committee, to be an achievement of which they cannot be proud.

I am, Sir, yours faithfully,

Queen Anne-street, W., July 20th, 1914. CHARLES MILLER.

WHO IS IT?

To the Editor of THE LANCET.

SIR,—After the amalgamation of the various societies into the Royal Society of Medicine the belongings of several of the dissolved societies were taken out of store, and among them was found a bust which so far no one has been able to identify, nor can I find among the officers of the dissolved societies anyone who knows anything about it. It is a striking bust, as the enclosed photograph bears witness—such a head should not easily be forgotten. I have had it displayed in a prominent place in the library ever since the opening of our new home, with a card attached to it inviting visitors to identify it, but the only suggestion that has been made is that it is a bust of Dante's friend, Brunetto Latini. This suggestion is based on the fact that the inscription on the bust is the description given by Dante of his friend. I do not agree with the

attribution, first, because of the style of the work; secondly, because there is in the British Museum an illuminated manuscript containing a portrait of Brunetto which does not bear the slightest resemblance to the bust; and, thirdly, because the inscription is just the kind of quotation that anyone with a knowledge of Dante would wish to inscribe on the bust of an honoured teacher.

I suggest that if you publish a reproduction of the photograph identification might follow.

I am, Sir, yours faithfully,

J. Y. W. MACALISTER.

Wimpole-street, W., July 17th, 1914.

*** The inscription, which cannot be deciphered in a profile photograph, runs as follows:—

"La cara buona immagine paterna
Che m'insegnava come l'uom s'eterna." —ED. L.

DEFERRED DEATH AFTER TRACHEOTOMY FOR LARYNGEAL DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—I must thank Mr. T. Jefferson Faulder for calling attention in THE LANCET of July 18th to an apparent inconsistency in my article on the above subject. The statement in question is that although recovery is exceptional once obstruction develops to a degree which makes extraction vital, this measure should be postponed until the obstruction becomes immediately dangerous. At first thought it may seem advisable to interfere before the condition is urgent, but clinical experience does not bear this out. It is better to wait, and meanwhile to use steam and the spray, which in themselves occasionally tide a patient over the critical period. Early extraction, as compared with such treatment, is no more certain to avert obstruction and has its own danger. A single extraction in any stage rarely gives permanent relief; forceps have to be used several times as a rule, and it can never be certain that some irritation and minor traumatic injury to the weakened mucous membrane may not result—conditions which favour a more rapid formation of the plug. Hence I regard extraction as a last resource. All that can be claimed for it is that it will postpone death in many cases, and offers a chance of recovery when a fatal issue is otherwise inevitable. Whether any variation of the method would improve the prognosis is an important question on which limited investigation at Plaistow Hospital throws no light. At best the gain is likely to be small, since behind the tracheal obstruction there is, in the majority of instances, a grave type of lobular pneumonia. I have no experience of the bronchoscope, and cannot foresee its rôle in this connexion, but as Mr. Faulder has kindly suggested its use I hope to test its possibilities in due course.

I am, Sir, yours faithfully,

Wimpole-street, W., July 18th, 1914. JOHN BIERNACKI.

THE SCHOOL MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—One still occasionally hears the gibe against school medical officers who are busy forming themselves into a group for the discussion of their peculiar interests, scientific and sociological (and I daresay it is said of the tuberculosis officers also who are doing the same thing) that it is only a movement of discontented juniors bent on forcing up their own salaries.

Now there is no doubt that an increase of salary has a perennial interest for most of us, but this does not entirely explain the agitation. The fact is specialised services like the school medical service are more and more feeling the need of being self-contained and self-feeding. We shall not in future be able to staff the lower ranks with mere transitional young people on their way to general practice or other departments of the public medical service for which, indeed, experience in school work very imperfectly fits them. The ideal of the future must be that of a Civil Service, in which even the lower grades of responsible workers must have a living wage, so that if they go no higher their lives will not have been a disastrous failure. I am, Sir, yours faithfully,

Stafford, July 18th, 1914. JOHN PRIESTLEY.

THE WORKING OF THE NATIONAL INSURANCE ACT IN GREAT YARMOUTH.

To the Editor of THE LANCET.

SIR,—It is nonsense for Dr. H. Blake, Mr. J. I. Sankey, and Dr. V. H. Blake, of Yarmouth, to write in THE LANCET of July 18th about "the British Medical Association breaking its side of the pledge." When Dr. J. R. Ratcliffe, of Birmingham, stated last year, at the annual representative meeting at Brighton, that the organisation of the Association had broken down, the chairman of the council very rightly objected to the statement, and said it was the individual members of the Association who had broken down, and that until they could get members of the Association to be loyal to the organisation nothing could be effected.

It is now known that the members of the medical profession cannot be trusted to stand by their words. What can we expect, then, but "trouble upon trouble," and the saddest part of it all is that many men do not seem to realise what they have done. I am, Sir, yours faithfully,

Woodbridge, Suffolk, July 19th, 1914. T. CUMING ASKIN.

THE POSITION OF THE ASSISTANT MEDICAL OFFICERS OF THE METROPOLITAN ASYLUMS BOARD.

To the Editor of THE LANCET.

SIR,—I see from your issue of July 18th that the Metropolitan Asylums Board are advertising for assistant medical officers at a new rate of salary. There has been a good deal of dissatisfaction in this service for some time past, and lately an association of assistant medical officers was formed which petitioned the managers for a redress of many grievances, of which the rate of salary was only one. No reply has yet, I understand, been received to this petition, and pending such reply the association is precluded from publishing the correspondence. Intending applicants would therefore, I am sure, be consulting their own interests by finding out from the secretary of the association (Dr. E. G. Goffe, the North-Eastern Hospital, St. Ann's-road, Tottenham, N.) what these grievances are, and how they have been dealt with, before deciding to apply.

I am, Sir, yours faithfully,

JOHN H. TRENCH, M.B. Cantab.

Edgbaston, July 20th, 1914.

CHILD MORTALITY AND ALCOHOLISM IN PARIS.

To the Editor of THE LANCET.

SIR,—May I call attention to the report from your Paris correspondent in THE LANCET of July 11th of a statement of M. Paul Juillerat and M. A. Filassier, in which they do not hesitate to attribute to alcoholism in the parents this enormous proportion of children affected with congenital debility, accounting for 12,342 deaths. This statement is so contrary to the findings of Professor Karl Pearson, F.R.S., and Miss Ethel M. Elderton (Galton research scholar)—viz.: "The mean weight and height of the children of alcoholic parents are slightly greater than those of sober parents, but as the age of the former children is slightly greater, the correlations when corrected for age are slightly

positive—i.e., there is slightly greater height and weight in the children of the sober. In the case of the father the correlations are not significant, having regard to their probable error; in the case of the mother they may be just significant, but they are so slight as to have no importance."

My practical clinical experience entirely endorses these scientists' findings. A few years ago I was surprised to find out of a large number of mothers visited in the Hoxton district what strong, well-developed infants these mothers had, although I knew that they were addicted to alcohol in excess. This difference between scientists requires more than a passing notice, and I trust that Professor Karl Pearson will reply to M. Juillerat and M. Filassier for the benefit of all impartial medical practitioners. I am, Sir, yours faithfully,

New Cavendish-street, W., July 18th, 1914. THOMAS DUTTON.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following medical degrees have been conferred:—

M.D.—F. R. Martin.
M.C.—W. S. Perrin, Caius.
M.B., B.C.—P. Stocks, King's; H. P. Dawson, Trinity; G. Askey, St. John's; and T. L. Hardy, Selwyn.
M.B.—F. E. W. Rogers, Emmanuel.
B.C.—H. Hartridge, King's; W. B. Gordon, Clare; W. F. B. Smith, Pembroke; J. W. Pigeon, Christ's; C. Mackenzie, Emmanuel; and R. A. Thacker, Downing.

UNIVERSITY OF BRISTOL.—At examinations held recently the following candidates were successful:—

SECOND EXAMINATION FOR THE DEGREES OF M.B., CH.B.
Edwin Jennings Ball, Reginald Bertram Britton, Norman Durant, Frederick Viel Jacques, and Ronald Henry Tasker.

FINAL EXAMINATION FOR THE DEGREES OF M.B., CH.B.
Part I. only.—Oliver Charles Minty Davis.

SECOND EXAMINATION FOR THE DEGREE OF B.D.S.
William John Langford.

DIPLOMA IN PUBLIC HEALTH.
William Teulon Torrance.
Part II. (completing examination).—John Richard Kay-Mouat.

SECOND EXAMINATION FOR THE DIPLOMA IN DENTAL SURGERY.
Roy Lugarde O'Sullivan.

UNIVERSITY COLLEGE, LONDON.—Mr. T. B. Johnston, M.B., Ch.B. Edin., lecturer on anatomy in the University of Edinburgh, has been appointed to the newly created office of lecturer and demonstrator in anatomy at University College, London.

UNIVERSITY OF LIVERPOOL.—Mr. John Smyth Macdonald, professor of physiology in the University of Sheffield, has been appointed to the Holt chair of Physiology in the University of Liverpool, vacated by Professor C. S. Sherrington.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations recently held the following were awarded certificates in School Hygiene and in Factory Hygiene:—G. D. Dawson, M.B., Ch.B., and W. M. MacIlraith, L.R.C.P., L.R.C.S.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—The summer general meeting and luncheon of this association will take place at the Grand Hotel, Aberdeen, on Wednesday next, July 29th, at 1.15 for 1.30 o'clock.

UNIVERSITY OF LONDON.—A meeting of the Senate was held on July 15th, Sir Wilmot Herringham, the Vice-Chancellor, being in the chair. It was resolved in response to a request from the Board of Control to suggest the following conditions for the grants allotted to the board by the Treasury encouraging scientific research into the causes and treatment of mental diseases and mental defect: (1) individual grants to be made to a few observers who have been thoroughly trained and who are capable of carrying out scientific investigations; (2) no grant under the scheme to be made merely to maintain or assist pathological laboratories or to be given to persons for the purpose of routine work; (3) grants to be given only to advance the study of fundamental problems connected with insanity and mental deficiency. It was further resolved to inform the Board of Control that the Senate would be pleased to advise them as to the objects towards which investigations thus aided might with most advantage be directed.

BRISTOL GENERAL HOSPITAL.—The president of the hospital, Mr. George Alfred Wills, will open the new wing and pathological laboratory on Monday next, July 27th, at 3.30 P.M.

MEDICAL MAGISTRATES.—The following Hull practitioners have been made justices of the peace for the city: Dr. Frank Nicholson, senior physician, Hull Royal Infirmary; Dr. George Gautby, ex-sheriff of Hull; and Mr. C. H. Milburn.

GLASGOW ROYAL INFIRMARY: POST-GRADUATE CLASSES.—Autumn post-graduate classes in clinical medicine, surgery, and gynæcology, and in the various special departments, will be held at the infirmary during the month of September. Full particulars may be obtained from the superintendent, Dr. J. Maxtone Thom.

BRITISH SCIENCE GUILD.—At the last meeting of the executive committee of the guild a special committee, with Sir Norman Lockyer as chairman, was appointed to report upon various matters connected with science and the State and the encouragement of discovery which were referred to by Sir Ronald Ross in his address delivered at the annual meeting of the guild in May last.

THE trustees of the *American Medicine* Gold Medal have awarded the medal for 1914 to Dr. George W. Crile as the American doctor who in their judgment "has performed the most conspicuous and noteworthy service in the domain of medicine and surgery during the past year."

ST. GEORGE'S HOSPITAL.—The annual dinner of the St. George's Hospital Medical School will be held at Prince's Restaurant, Piccadilly, on Thursday, Oct. 1st, at 6.30 for 7 o'clock, when the Right Hon. Sir Gerard Lowther, joint treasurer of the hospital, will take the chair. The annual introductory address will be delivered on the same day at 3 P.M. in the hospital by Mr. A. E. Shipley, F.R.S., Master of Christ's College, Cambridge.

DONATIONS AND BEQUESTS.—A further gift of £10,000 has been made to Cardiff Medical School by the anonymous donor who has previously made donations equivalent to £90,000.—Mr. Lynn Thomas, on giving up private practice, has presented to King Edward VII. Hospital, Cardiff, his local private hospital for paying patients, the value of the gift being estimated at £4000

SOUTH-WEST LONDON MEDICAL SOCIETY.—At the annual meeting of this society on July 8th the following were elected as office-bearers for the 1914–15 session:—President: Dr. W. D. Murray. Treasurer: Dr. C. J. Martin. Secretaries: Mr. R. F. Chance and Mr. H. B. A. Pearson. Librarian: Dr. C. J. Martin. Council: Dr. E. H. Brock, Dr. G. F. Hugill, Dr. G. Ross Laing, Surgeon-Major M. Robinson, and Dr. C. M. Young.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 429, Strand, W.C., on July 17th, Dr. F. J. Allan being in the chair. The half-yearly balance-sheet submitted to this meeting showed that the society's reserves continue to expand. The funds amount to over £260,000, and the income of the society is well over £35,000 per annum and shows a steady rise every year. The grateful letters from members who attain the age of 65 and receive their bonus are highly satisfactory to those under whose careful management the society has prospered sufficiently to enable this bonus to be paid, and the amount actually paid increases every year, and reached £1500 in 1913. This fact proves that many attain 65 years, and that insured medical men are, taken as a whole, good lives. The claim account presented was slightly lower than that of last year and was under the expectation provided for by the tables. The new business report was good and shows an increase over that for the same month of the preceding year. A prospectus and all information can be obtained from the secretary, 33, Chancery-lane, London, W.C.

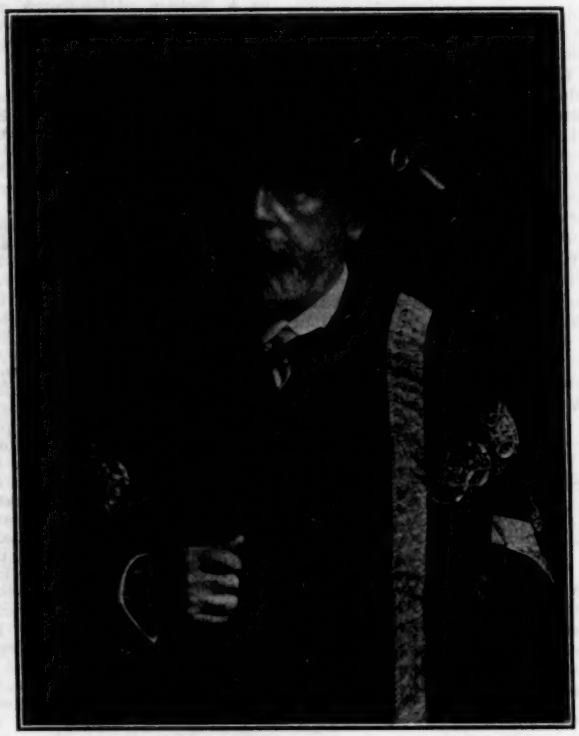
Obituary.

THE RIGHT HON. SIR CHRISTOPHER NIXON, BART., P.C., D.L., LL.D., M.D. DUB., F.R.C.P. IREL.,

VICE-CHANCELLOR OF THE NATIONAL UNIVERSITY OF IRELAND; PAST PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE death of Sir Christopher Nixon occurred on Sunday, July 19th, at his residence, Roebuck Grove, Co. Dublin, at the age of 64 years. He had been seriously ill with disease of the heart for several months past, and it was known that his chance of ultimate recovery was small. Nevertheless, his death came as a surprise to all except his intimate friends.

Sir Christopher Nixon received his education at Trinity College, Dublin, and the Catholic University School of Medicine. He obtained the Licences of the Royal Colleges of Ireland at an early age, subsequently graduating B.A. and M.B. of Dublin University. He then studied for some years in Paris. On his return to Ireland he was appointed professor of anatomy and physiology in the Catholic University School of Medicine in Cecilia-street. This post did not occupy his entire time, and his appointment as physician to the Mater Misericordiæ Hospital gave him scope for his clinical abilities. To these two institutions and to the interests that arose out of them he gave the best of his life-work. To his gifts as a teacher both owed much, and for years he enjoyed the reputation of being the best clinical instructor among Dublin physicians. He soon changed the chair of anatomy for that of medicine, and his professorial lectures on that subject were attended by students from all the Dublin schools. As time passed his reputation as a practising physician became as great as his reputation as a teacher. Success came to him early, but this did not lead him to take his work lightly or to neglect self-improvement. Up to the failure of his health a year or two ago he took the utmost pains in the preparation of his clinical lectures. He carefully selected his cases for demonstration, and he made a habit of devoting the evening before his lecture to the perusal and even close study of the clinical notes of the cases selected, so that everything might be in order for his lecture. The same care distinguished the systematic course which it was his duty as professor of medicine to deliver. In such careful, honest teaching in the hospital and the school, and careful, honest work in the ward and the consulting-room, Nixon's purely professional activities were mainly expended. He found little time for writing. In his earlier days, indeed, he published several papers which showed not only accurate study but originality of thought. He wrote one book, "Handbook of Hospital Practice and Physical Diagnosis," which was published in 1889. Books on diagnosis are now plentiful enough, but a quarter of a century ago Nixon might fairly be regarded as a pioneer. The book was excellent for its purpose, clear, lucid, terse, and it proved its utility to many successive generations of students. It is to be regretted that lack of time prevented his revising it and bringing it into touch with current knowledge. In his clinical work Nixon took chief interest in the diseases of the heart—a fact which leads inevitably to the recollection that some of the most able students of, and trustworthy authorities on, diseases of the heart have themselves been sufferers from cardiac trouble. To go no further, we may add to Nixon, of Dublin, the names of Gairdner, of Glasgow, and Gibson, of Edinburgh.



SIR CHRISTOPHER NIXON.
(Photo by Lafayette, Dublin.)

Sir Christopher Nixon's teaching duties, together with his hospital work and large private practice, would have been to most men sufficient occupation, but, as a matter of fact, for many years past his extra professional activities occupied a large part of his time and thought. He took a great interest in the development of his school and hospital, and his power of organisation and business ability played an important part in leading to the success which has crowned the work of both these institutions. He felt keenly that his co-religionists in Ireland suffered some inequality in the matter of university education, and therefore he threw himself warmly into the working of the Royal University. At a later date he was active in the work which led up to the establishment of the National University, of which he became the first Vice-Chancellor. He was one of the first to take up warmly the question of establishing a veterinary college for Ireland. His efforts were successful, and when the Royal Veterinary College of Ireland was founded he was appointed first president. In addition to the posts already mentioned, he held several of the medical posts of importance. He was

visiting physician to Dundrum Criminal Lunatic Asylum and to the College of Maynooth, and he was consulting physician in lunacy to the High Court of Chancery. Since the establishment of University College, Dublin, as a constituent college of the National University, he occupied its chair of medicine. He represented the Royal University, and more recently the National University on the General Medical Council. He was President of the Royal College of Physicians of Ireland, and was physician to more than one Viceroy of] Ireland, including the present Lord-Lieutenant, Lord Aberdeen.

Many public honours came to him. He was a magistrate and a deputy lieutenant for the county of Dublin. In 1885 the Royal University conferred on him the degree of M.D. *honoris causâ*, and in 1912, on the occasion of the bicentenary celebrations of the medical school of Trinity College, he received a similar honour from his *alma mater*. In 1895 he received the honour of knighthood, and in 1906 he became a baronet of the United Kingdom. Within the present year his name was added to the list of His Majesty's Privy Council in Ireland. He married in 1872 Mary Agnes, daughter of Dominick Edward Blake, of Castlegrove, county Galway, by whom he had issue one son and three daughters.

Sir Christopher Nixon performed an enormous amount of public work with ability and assiduity. He was a physician of skill and learning, and a teacher of the first order. It may be regretted by his friends that he did not find time to give to a wider audience, by means of his pen, the wealth of learning which he lavished on his class of students. That he could have increased his reputation by writing more is certain, but had he done so, much of what he actually accomplished must have been left undone. His was a fine practical career.

TWO DISTINGUISHED PHYSIOLOGISTS.

(FROM A CORRESPONDENT.)

THE physiological world has had to deplore recently the loss of two of its most distinguished continental representatives, Professor Dr. Ludimar Hermann, who for many years occupied with such *éclat* the chair of physiology in the University of Königsberg, and Professor Kronecker, professor of physiology in the University of Berne.

Dr. Ludimar Hermann was born in Berlin on Oct. 31st, 1838. He attended the university and took his degree in 1859, and afterwards as *privat-docent* dedicated himself to physiology in his native city. In 1868 he was called to Zürich as professor ordinarius of physiology, and reference to Pflüger's Archiv and Poggendorff's Annalen shows how active and fertile were both his brain and pen. Many of his contributions to physiology showed a distinctly physical bias, while some were largely chemical. Those physiologists who are old enough to recall the elaborate and vastly unsatisfactory theories of Professor du Bois Reymond, of Berlin, by way of explaining the "muscle current," the "nerve current," and the so-called "negative variation," may also recall how, as it were, with one illuminating suggestion Hermann swept away all this theorising. To-day Hermann's theory of the muscle current holds the field. Not the least of Hermann's services to physiology and to medicine in general is that he in 1863, along with von Recklinghausen, W. Kühne, and Ph. Munk, founded the *Centralblatt für die Medicinischen Wissenschaften*, the parent of *Centralblatts* galore. His "Grundriss der Physiologie," written in a terse, didactic style, ran into many editions, and two of these editions (fifth and sixth) were translated into elegant English by the late Professor Arthur Gamgee. It was also translated into several other languages. Following the idea of the first classic German "Handwörterbuch der Physiologie" (1842–53) and Todd and Bowman's "Cyclopedia of Anatomy and Physiology," Hermann edited as well as contributed to his well-known "Handbuch der Physiologie" which bears his name, and in which some of the epoch-marking contributions to physiology during the latter part of last century may still be read with profit. His "Lehrbuch der Allgemeinen Toxikologie" (1874) was a notable contribution to this subject in these now, alas, far-off days. In 1884 Hermann was called to succeed the versatile von Wittich in the Northern Prussian University of Königsberg, where for many years he added greatly by his contributions to the advancement of that science to which he had dedicated the highest efforts of his intellect. At this time when attacks are made against what is called "vivisection" in this country, it may not be amiss to recall that Hermann published a pamphlet, which was translated into English in 1877 by A. Dickson, of Edinburgh, under the title "The Vivisection Question Popularly Discussed," the original German title being somewhat more terse, to wit, "Die Vivisectionsfrage."

In Berne one day after the death of Hermann Dr. Hugo Kronecker, professor of physiology in the University of Berne, died. Hugo Kronecker was born in Liegnitz in Silesia in 1839. He studied in Heidelberg under Helmholtz and also in Berlin, and graduated in Berlin in 1863; his dissertation dealt with muscular fatigue. As private assistant to the world-renowned physician Traube, Kronecker acquired an intimate knowledge of practical medicine, which served him in good stead as an army surgeon during the campaigns of 1866 and 1870–71. For his services he was rewarded with the decoration of the Iron Cross. He also carried out chemical investigations under Willy Kühne, and in 1868 he went to Leipsic and became assistant to, as well as one of the most esteemed pupils and friend of, Carl Ludwig. He was *privat-docent* in 1872 in Leipsic, and his dissertation "On the Fatigue and Recovery of Cross-striped Muscle" became famous. In 1875 he was elected professor extraordinarius; in 1877 he was called to Berlin; and in 1885 he became professor in Berne, and was thus in the line of succession of the great Haller himself. He liked to call his institute the "Hallerianum." For some years along with Senator he edited the *Centralblatt für die Medicinischen Wissenschaften*. Kronecker's scientific activity was many-sided and catholic in its scope. His studies on muscle form the basis of our knowledge of the laws of muscular fatigue. He discovered that during the first part of a cardiac contraction the heart is inexcitable to stimuli, a phenomenon also discovered by Marey, and by him called the "refractory period." Kronecker's point in the heart is well known, and so are his researches on excised surviving organs, more especially the heart, uterus, and vagina. Reflex action, respiratory movements, swallowing of fluid, vaso-motor centre, sources of animal heat, the action of cardiac poisons, and many other subjects were studied by himself and his numerous pupils. Later in life he made important studies on the effects of rarefied air on the circulation, which have borne important practical results more especially in the process of tunnelling through mountain masses. Kronecker stood in the front rank of physiologists, and his influence on physiology was far greater than might be inferred from the list of papers published under his own name. Like his great master, C. Ludwig, much of the work he inspired was published in the names of his pupils. Everything he did was thorough, and because he had an almost encyclopædic knowledge he was able to give every question he handled an appropriate historical setting. He gave to all his co-workers and pupils "without money and without price" the benefits of his rich stores of knowledge. He was a most lovable, amiable, and generous-hearted man. He was an accomplished linguist, almost a polyglot. In Ludwig's laboratory he could be heard enlightening the latest Italian arrival, who knew no German, in accents as elegant as those spoken by any true-born son of Italy.

All who knew Kronecker—and his friends were legion—became attached to him, for he had a gracious winning

personality, at once genial and kindly. He was a foreign member of the Royal Society, an LL.D. of the four Scottish Universities—Aberdeen, Edinburgh, Glasgow, and St. Andrews—as well as D.Sc. of Cambridge. Physiology is vastly the poorer for his death, and his friends will ever keep green the memory of this amiable, accomplished, genial, and erudite physiologist.

THE NATIONAL INSURANCE ACT.

THE WORKING OF THE ACT.

EXPERIENCE that is long enough to be of some service is now accumulating in respect of the working of the Act. With regard to the supply of drugs and appliances, for example, the settlement of the 1913 accounts discloses, as all our readers know, some heavy deficits. A discussion on the subject will be found in a leading article in THE LANCET of June 27th. The Commissioners have been considering steps to obviate the anticipated recurrence of similar deficits in the current year. At a conference with the medical and pharmaceutical members of the Advisory Committee the causes of these deficits were carefully considered, and the conclusion, we believe, was arrived at that a substantial part of the deficits could be traced to the lax methods of prescribing of a few practitioners. The Pharmaceutical Society is anxious, we know, not to attribute too much of the present situation to over-prescribing, and it must be remembered that the cost of the supply of drugs may sometimes have caused the deficits, while, of course, in certain areas the varying incidence of sickness must lead to extraordinary expenses. Lancashire was selected by the Pharmaceutical Society as the area in which to make an inquiry into the matter from the chemists' point of view, but a conference between insurance, panel, and pharmaceutical committees in that county has not resulted so far in any definite suggestions.

The safeguards against lax or excessive prescribing are contained in Article 40 of the Regulations under which a Pharmaceutical Committee by making representations to a Panel Committee may require the latter committee to investigate and report on the subject to the Insurance Committee concerned, and this last body can surcharge the practitioners responsible for the excess. We do not know how often Pharmaceutical Committees have made the necessary representations to Panel Committees, but the Panel Committees have failed to put machinery into operation. The responsibility for the situation appears, therefore, to lie to some extent at the door of the panel practitioners, but we can understand that they may find the *métier* of informer a very difficult and unpleasant one to exercise. This difficulty, we are informed, has been recognised by the Advisory Committee, and their recommendations to the Commissioners may result in some readjustment of the financial machinery of the Act. It seems that this is all the more necessary, inasmuch as a Panel Committee, though the only one of the three statutory bodies interested which can control prescribing is the particular one which is the least interested in the task of control, and more and more as the division between medical practice and the making up of prescriptions becomes pronounced will this position become confirmed. The Advisory Committee have advised the Commissioners that it is undesirable that panel practitioners should have a direct financial interest in the business of chemists on the panel in the same neighbourhood, and the probability is that the use by doctors of chemists' shops as surgeries or consulting-rooms will gradually decline.

Other matters which may call for revision of the Medical Benefit Regulations, and which were recently discussed between the Commissioners and the members of the Advisory Committee, included the procedure in regard to complaints by insured persons of the professional services of panel practitioners and the question of the utilisation of new machinery, such as medical refereeing and laboratory facilities, to the best advantage. It is a gratifying circumstance to note that the number of complaints against panel practitioners has been small and also that the character of these complaints has mostly been unimportant; but it is a fact that the existing machinery for dealing with offenders, whose errors are not sufficiently grave perhaps to warrant representations with a view to removal from the panel, is not satisfactory. For the good of the whole medical profession some of these lax practitioners ought none the less to receive some more effective check than a warning in which no publicity is given to their names, for undoubtedly the protection afforded by anonymity is almost complete. On the other hand, the punishment suggested by publication of names would be very great, and we can conceive grave hardship to follow any unfortunate error. The fact is that Insurance Committees would be well advised to shift the responsibility in really bad cases on to the shoulders of the General Medical Council. Where Insurance Committees are in full possession of facts which point to professional misbehaviour we think that it would be for the good of the public, of our calling, and of the panel service alike, if the cases were brought before the disciplinary body of the profession.

MR. MASTERMAN AND THE PHARMACEUTICAL SOCIETY.

Mr. Masterman, as chairman of the National Health Insurance Commissioners, together with some of his colleagues on the Commission, received a deputation from the Pharmaceutical Society on the subject of the insufficiency of the drug funds in several localities to pay in full the druggists who have undertaken to make up prescriptions under the Insurance Act. Mr. Edmund White, President of the society, on behalf of the deputation, spoke of the funds as being sufficient in about 150 areas out of 196, and of the deficiency where it existed as varying from 3 to 30 per cent. He referred to the high sickness rate among insured women as a contributing cause, and to the receipt of ordinary medical benefit by tuberculous patients who should be receiving sanatorium benefit as another. He said that the agreement by druggists to allow a discount when necessary had been entered into in error, and he urged that the profits on accounts were too small to allow any margin for discounts. Mr. Masterman, in reply, said that the conditions as to discount on druggists' accounts could not be reconsidered until the existing Regulations had been fully utilised. The Government had a small fund wherewith to meet the contingency of excessive sickness, but it was not intended to meet a demand due to excessive prescribing. He recognised that Pharmaceutical Committees in some areas were exercising their

powers with regard to the supervision of prescriptions, and urged the Pharmaceutical Society to influence Pharmaceutical Committees to do the same. The matter concerned these and also Panel Committees and Insurance Committees. If the druggists later on satisfied him that the committees had used their utmost efforts under the Regulations, and that nothing had been done by way of surcharging the medical men responsible, a new situation would have arisen with which the Commissioners and the Government would have to deal. Upon the information before him he thought there were grave discrepancies between the cost of prescriptions in different areas and as between individual medical men. He thought these differences must in some cases be due to laxity on the part of a small number of individual medical practitioners. It appeared to him that the time had come to have the tariff for drugs examined by a Departmental Committee, and he would take account of the suggestions made by the deputation.

THE SANITARY CONGRESS AND NATIONAL INSURANCE.

At the twenty-ninth annual Congress of the Royal Sanitary Institute interesting references to the working of the National Insurance Act were made by many speakers. Dr. James Niven, medical officer of health of Manchester, said that it would not be claimed that the Act had produced any great immediate effect on public health administration except as regards tuberculosis, but it promised to do so. It had not hitherto diminished the difficulty of obtaining enough medical practitioners for poor areas to enable patients to receive the time and attention necessary. A State service by whole-time medical officers paid by salaries to attend a definite number of patients was a remedy suggested which was growing in favour. The public health staff had felt the strain of sanatorium benefit work added to their duties, and other public health work had to some extent suffered, but this difficulty was a temporary one only. Dr. Meredith Young spoke of the results of the Act in procuring the early diagnosis of such diseases as Bright's disease, cancer, and heart disease as not so far satisfactory, and Dr. Alfred Greenwood, medical officer of the Kent county council, described institutional treatment under the Act as not having had a fair chance of showing good results, as few sanatoriums as yet had been able to treat any large number of the early cases for which they were intended. In the course of a discussion upon the housing question some vigorous and suggestive observations were made by Dr. J. Holroyde upon the responsibility of the slum dweller for the conditions in which he lived, and upon "lazy and dirty tenants being allowed to be nuisances and breeders of disease, and to go unpunished" as such. He spoke of the slum dweller as unworthy, in the majority of instances, of the "sentimental utterances of a certain type of social reformer whose fetish was the 'liberty of the subject.'" Alderman J. W. Midgley said that the greatest difficulty was not in compelling owners to put their property in a sanitary condition, but in compelling the occupiers to keep it so.

THE LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION AND THE ACTS.

A communication has been issued by the secretary of the Life Assurance Medical Officers' Association announcing the intention of the association to extend the scope of its work in order to include all medical questions connected with assurance. The next meeting of the association will be held in November, and will be devoted to a discussion on the Certification of Incapacity under the National Insurance Act. The honorary secretaries are Dr. R. A. Young, 57, Harley-street, W., and Dr. Otto May, 19, Well-walk, Hampstead, N.W.

BLACKBURN INSURANCE COMMITTEE.

At the quarterly meeting of the Blackburn Insurance Committee it was reported that the amount due to medical men on the panel for the year was £20,156, of which £19,644 had been paid, and of which the balance, representing money accumulated in respect of unallotted insured persons, would be divided among the practitioners on the panel in proportion to their lists. In consequence of a report of over-prescribing being made by the Pharmaceutical Committee it was resolved to go through all prescriptions and calculate in respect of each medical man on the panel the average price of prescriptions given by him, the average number of prescriptions issued per person, the average cost of drugs ordered, and also the averages for the same matters over the whole area. A letter was received from the Commissioners calling attention to the desirability of reminding medical men to comply with the conditions necessary for the protection of the drug fund.

DUNDEE INSURANCE COMMITTEE: PRIVACY IN CASES OF COMPLAINTS.

At a meeting of the Dundee Burgh Committee held last week the suggestion of the Medical Subcommittee of the Dundee Insurance Committee—viz., that "the names of persons concerned with cases of complaint reported on by the Medical Service Subcommittee shall not be printed in the reports of such committee, and the persons concerned shall only be referred to in any discussion in the Insurance Committee as 'the patient' and 'the doctor,' or such other terms as will assure that identification is impossible"—was under discussion. The chairman of the Medical Service Subcommittee wrote that he considered the motion *ultra vires*, because the Commissioners had issued regulations by which the proceedings of the subcommittee were regulated, and unnecessary because these regulations prescribed that the proceedings of the subcommittee were to be private. So far as he knew that condition had always been observed, and no name, either of the insured person or of the doctor, had appeared in any of the subcommittee's reports. Eventually the previous question received 16 votes to 11 for the Medical Committee's motion.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Fate of Bills.

MR. ASQUITH, on Friday, July 17th, made a statement concerning the Bills with which the Government proposed to proceed this session and those which they would abandon. In the list of the abandoned measures are the Direct Representatives of the General Medical Council Bill, the Hops (Substitutes) Bill, and the Naval Medical Compassionate Fund Bill. Amongst the Bills which the Government hope to pass are the Milk and Dairies Bill, the Milk and Dairies (Scotland) Bill, the Inebriates Bill, and the Elementary Education (Defective and Epileptic Children) Bill. The last-mentioned measure was read a third time in the House of Commons on Friday, July 17th.

Asylum Officers' Superannuation Act.

Some negotiations have been taking place with the Home Secretary in regard to the amendment of the Asylum Officers' Superannuation Act. A private Member's Bill on this subject was introduced into the House of Commons this session, but it has not in all respects been acceptable to the Home Office.

Midwives (Scotland) Bill.

One amendment of substance has been introduced into the Midwives (Scotland) Bill which came before the Standing Committee on Scottish Bills of the House of Commons on Wednesday, July 22nd. Clause I., amongst its other provisions, laid down that after Jan. 1st, 1921, "no woman shall attend women in childbirth otherwise than under the direction of a registered medical practitioner unless she be certified under this Act." This provision was wider than the corresponding provision in the English Act. The prohibition there is that "no woman shall habitually and for gain attend," &c. In order to meet certain opposition in the House of Commons an arrangement was come to that the more restricted phraseology of the English statute should be introduced into the Bill in committee. Mr. BARNES, who is taking charge of the Bill, brought forward an amendment to give effect to the arrangements. He confessed that he did so with feelings of regret, but at this stage of the session there were only two alternatives. The Bill must either be sacrificed or the amendment introduced. Medical opinion,

he said, preferred to take the Bill in its amended form than not at all. Several honourable Members took the same line, although they admitted that the introduction of the amendment would not conduce to the effective working of the Bill. Ultimately by 21 votes to 3 the committee decided to insert the words "habitually and for gain." The Bill as amended was ordered to be reported to the House.

Early Mental Cases.

Earl RUSSELL in the House of Lords on Wednesday, July 22nd, presented a Bill to deal with early mental cases. He said that its object was to enable persons who were in the early stages of lunacy to be placed under control on the authority of a medical man. The Bill avoided the use of the word "certificate" because it was desired that it should carry no stigma. The Bill was read a first time. It is not proposed to proceed further with it this session.

HOUSE OF COMMONS.

WEDNESDAY, JULY 15th.

Medical Inspectors under Mental Deficiency Act.

Mr. SNOWDEN asked the Home Secretary what appointments had been made to the posts of medical inspectors under the Mental Deficiency Act, whether all the persons appointed were men, at what salaries they had been appointed, whether the posts were advertised, whether it was intended to appoint a woman or women medical inspectors, and, if so, at what salaries.—Mr. MCKENNA replied: Three such appointments have been made, all of men, at the following salaries: chief inspector, £200, in addition to his salary as inspector under the Inebriates Act; one inspector, £500, rising to £800; one inspector, £400, rising to £600. The last two posts were advertised. It is intended to appoint a woman medical inspector, and provision is made in the Estimates for a salary of £350, rising to £550. The Board of Control has not yet secured the services of a suitable person.

Sanatorium Benefit Funds.

Major HOPE asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether there was any limit to the percentage of the sanatorium benefit account for which Insurance Committees might take credit and expend on purposes of general administration expenses of the committees.—Mr. WEDGWOOD BENN answered: No part of the sanatorium benefit funds of an Insurance Committee may be applied to defray the cost of any administration expenses other than those actually incurred either directly or indirectly in the administration of sanatorium benefit. The amount so applied necessarily varies in different areas, but is in all cases subject to review by the Treasury auditors.

Major HOPE: Is it possible to keep the administration expenses of sanatorium and other benefits separate?—Mr. WEDGWOOD BENN: I do not think it is practicable to do so.

Unremunerative Scientific Work.

Mr. COWAN asked the Prime Minister whether any existing fund is available out of which men of science might be compensated for losses incurred by them in doing unremunerative scientific work when such work had proved to be of advantage to His Majesty's Government and subjects; and whether, if no such fund was available, he would consider the advisability of providing funds for meeting such cases in the future.—Mr. ASQUITH said in reply: I am not aware of any fund other than the Civil List. The conditions for the granting of Civil List pensions are laid down by Sections 5 and 6 of the Act I. and II. Vict. c. 2. I am not satisfied that further provision is necessary. I may add that nine pensions were awarded last year for scientific services, two to scientists themselves and seven to their widows or daughters.

Housing in Rural Districts.

Replying to Mr. LANE-FOX, Mr. RUNCIMAN (President of the Board of Agriculture) said that the number of local authorities carrying out building schemes in agricultural districts was extremely small. In selecting the agricultural districts in which cottages were to be built under the provisions of the Housing Bill the Board would have regard to the urgency of the demand and to the practicability of obtaining land at a reasonable price. He was prepared to consider any representations which might be made to him on behalf of local authorities, but the Board could not bind itself to refrain from exercising its powers in any particular district merely on the ground that the local authority had or had not taken action under the Housing and Town Planning Act. In reply to further questions the right honourable gentleman said that the experience in England was that the local authorities had done very little in the agricultural districts, but having embarked on this scheme proposals brought forward for agricultural or other districts would be considered on their merits.

Answering Mr. C. BATHURST, Mr. ASQUITH said that he hoped that the Government Housing Bill would be treated as a non-contentious measure and carried into law this session.

Medical Inspection in Secondary Schools.

Mr. ASTOR asked the President of the Board of Education whether any provision was made for the medical inspection and medical treatment of children attending secondary schools, and if so from what source was payment provided.—Mr. J. A. PEASE wrote in reply: Medical inspection is provided in some secondary schools, and is paid for out of the funds available for the maintenance of the school. Where medical treatment is provided it is generally, I think, provided at the cost of and by arrangement with the parent. The honourable Member will find some information on the subject in the annual report for 1912 of the chief officer of the Board.

Committee on Food Preservatives.

In reply to Colonel IVOR PHILIPPS, Mr. HERBERT SAMUEL (President of the Local Government Board) wrote that he hoped to be in a position very shortly to announce the names of the Committee on Preservatives in Cream and other Food.

THURSDAY, JULY 16TH.

Scottish Clerks' Association and Medical Benefit.

Mr. NIELD asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether application was made by the Scottish Clerks' Association, whose head office was in Glasgow, to have their special medical scheme whereby a member had free choice of doctor, paid the charge incurred, and upon verification of such payment was reimbursed by the society, and which scheme the society had worked successfully for many years, recognised by the Commissioners in the event of them granting the application of the society to be an Approved Society under the Act; whether the society was informed, and when, that their medical scheme was accepted; whether such acceptance was subsequently repudiated; and, if so, when and for want reason.—Mr. WEDGWOOD BENN answered: The scheme referred to has at no time been approved by the Commissioners. The latter two parts of the question do not therefore arise.

Supply of Drugs by Panel Practitioners.

Mr. WEDGWOOD BENN informed Mr. PRATT that an arrangement was expressly provided for in the Regulations that in districts where there was no chemist available the Local Insurance Committee should arrange with the doctors on the panel for the supply of drugs and medicine for a capitation payment of 1*s.* 6*d.* per insured person. The arrangement had been found to work satisfactorily.

The Nursing Grant.

Major HOPE asked the Chancellor of the Exchequer whether the House would have the opportunity of considering any scheme for the allocation and administration of the Budget grant in aid of nursing for the current year before such scheme was finally approved.—Mr. LLOYD GEORGE replied: It is proposed to present a supplementary estimate to Parliament this session in respect of the service referred to, and I hope that there will be an opportunity for discussion upon it.

Health Lectures.

Answering Mr. ASTOR, Mr. HERBERT SAMUEL wrote: Section 60 (1) (*b*) of the National Insurance Act provides that the Insurance Committee of a county or county borough may make such provision for the giving of lectures and the publication of information on questions relating to health as it thinks necessary or desirable, and Section 61 (3) of that Act empowers any local authority to subscribe such sums as it may think fit towards the general purposes of the Insurance Committee. Subject to this I am not aware of any general statutory authority for county councils or sanitary authorities in England and Wales to provide lectures on matters relating to public health.

MONDAY, JULY 20TH.

Choice of Medical Man.

Mr. NIELD asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the Commissioners, or any of the Insurance Committees acting under their directions, claimed to have an arbitrary power to refuse an insured person the choice of a medical attendant; if so, was there any appeal, and to whom, from any decision come to; and had any regulations been made upon the subject of applications by insured persons to make their own arrangements, or any definite directions given as to what circumstances should be taken into account in considering such applications.—Mr. WEDGWOOD BENN replied: Section 15 (3) of the Act of 1911 lays upon Insurance Committees the duty of deciding in the first instance upon applications from insured persons to make their own arrangements. Regulations have been made in pursuance of the

section and the provisions of Section 67 (2) are applicable to these cases.

Medical Treatment of Sailors in Port.

Mr. FRED HALL (Dulwich) asked the honourable Member for St. George's-in-the-East whether in cases in which insured seamen were taken ill in a British port and ordered by a doctor into hospital the expenses which the hospital authorities might require the ship-owner to guarantee were in any circumstances recoverable from the insurance authorities; if they were not so recoverable, whether the ship-owner could be compelled to pay such expenses; and whether, in any proposals brought forward for the amendment of Part I. of the National Insurance Act, consideration would be given to the question of at any rate relieving ship-owners of any responsibility for expenses incurred in connexion with the medical treatment of insured seamen while in British ports.—Mr. WEDGWOOD BENN said in reply: The liability of a ship-owner to provide surgical and medical advice and attendance and maintenance during periods of illness in respect of the seamen employed by him is determined by the Merchant Shipping Acts, and is not affected by the provisions of the National Insurance Acts. I cannot undertake to anticipate the provisions of future legislation with regard to the liabilities of ship-owners to their employees.

Middlesex Insurance Surplus Funds.

Mr. WORTHINGTON-EVANS asked the honourable Member for St. George's-in-the-East whether the Middlesex Insurance Committee had yet distributed among the panel doctors any of the surplus funds for 1913; if not, what was the reason of the delay; and, if so, would he say what addition it had made to the fixed remuneration per head of persons treated.—Mr. WEDGWOOD BENN answered: Advances had been made to a total amount in excess of the amounts due in respect of insured persons on doctors' lists only, but the difference between the amounts due on the latter basis and the amount due in respect of the total insured population of the area entitled to treatment by doctors on the panel cannot be ascertained until the completion of the settlement now in progress.

Tuberculosis Treatment in Middlesex.

Mr. WORTHINGTON-EVANS asked the honourable Member for St. George's-in-the-East whether the Middlesex Insurance Committee had distributed among the panel doctors of their area any sum for tuberculosis treatment; and if no such distribution had taken place, would he say what was the cause of the delay.—Mr. WEDGWOOD BENN replied: The answer to the first part of the question is in the affirmative. The second does not therefore arise.

Baby Clinics and Infant Dispensaries.

Mr. RAMSAY MACDONALD asked the Prime Minister whether it had now been decided what departments were to be responsible for the administration of grants to baby clinics and schools for mothers; and whether he could say what the arrangement was.—Mr. ASQUITH said in reply: Any funds available for grants to institutions of the nature of baby clinics and infant dispensaries, whose primary object is to provide medical and surgical advice and treatment for infants and little children, will be administered by the Local Government Board. Grants to institutions of the nature of schools for mothers, the object of which is primarily educational, which provide training and instruction for mothers in the care and management of infants and little children, and which may include systematic classes or home visiting or infant consultations, the provision of specific medical and surgical advice and treatment, if any, being incidental, will be administered by the Board of Education. Any cases of doubt or difficulty will be investigated by a joint committee of officers of the two Boards, which will include women medical officers.

Urban Housing.

Sir A. GRIFFITH-BOSCAWEN asked the Prime Minister whether the Government intended to deal with the question of urban housing.—Mr. ASQUITH replied: Yes, sir.

Imperial Military Nursing Service.

Dr. CHAPPLE asked the Under Secretary for War whether, under the regulations of Queen Alexandra's Imperial Military Nursing Service, it was compulsory for a staff nurse or sister to hold a certificate of three years' training in a recognised hospital.—Mr. TENNANT answered: Yes, sir.

Medical Inspectors under Mental Deficiency Act.

Lord NINIAN CRICHTON-STUART asked the Secretary of State for the Home Department whether he could state the names of the medical inspectors lately appointed under the Mental Deficiency Act.—Mr. MCKENNA answered: The names of the inspectors in order of seniority are:—Dr. R. W. Branthwaite, Dr. A. E. Evans, and Dr. S. E. Gill.

Outbreaks of Cow-pox.

Mr. W. THORNE asked the President of the Local Government Board whether the reports of the medical inspectors of the Board who investigated the outbreaks of cow-pox at Frome in 1909, Sudbury in 1909, Oundle in 1911, and Ashton in 1911 had been published.—Mr. HERBERT SAMUEL replied: Of the outbreaks referred to in the question only one—namely, that at Frome—was investigated by an inspector of the Local Government Board. The origin of this outbreak of cow-pox could not definitely be ascertained, and it was not considered necessary to publish the report. There is no basis for the suggestion that the cows had been infected by the milkers, and I may mention that the affected cowmen were attacked subsequently to the cows on which they attended. No fresh strains of vaccine lymph were obtained in connexion with the outbreak.

TUESDAY, JULY 21ST.

Imperial Military Nursing Service.

Dr. CHAPPLE asked the Under Secretary for War whether there was an ample supply of applicants to fill staff nursing vacancies in Queen Alexandra's Imperial Military Nursing Service.—Mr. TENNANT replied: Yes, sir, the supply is ample.

WEDNESDAY, JULY 22ND.

Tenure of Medical Officers of Health.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether he proposed to issue before the end of this session a general order which would secure for district medical officers of health and sanitary inspectors greater security in the tenure of their offices; and, if so, when such order would be issued.—Mr. HERBERT SAMUEL replied: The matter is still under consideration. I hope to be able to come to a conclusion on it at an early date.

BOOKS, ETC., RECEIVED.

BAUERMEISTER, F., 19, West Regent-street, Glasgow.
Lehrbuch der Grenzgebiete der Medizin und Zahnheilkunde für Studierende, Zahnärzte und Aerzte. Bearbeitet und herausgegeben von Dr. Julius Misch (Berlin). Price 36s.

GRIFFIN, CHARLES, AND CO., London.
Treatment of Diseases of the Digestive System. By Robert Saundby, M.D., M.Sc., LL.D., F.R.C.P. (Lond. et I.), Professor of Medicine in the University of Birmingham. Second edition, revised and enlarged. Price 4s. net.

HEINEMANN, WILLIAM, London.
The Salvarsan Treatment of Syphilis in Private Practice, with Some Account of the Modern Methods of Diagnosis. By George Stopford-Taylor, M.D., M.R.C.S., and Robert William Mackenna, M.A., M.D., B.Ch., Physicians to the Liverpool Skin Hospital. Price 5s. net.

HIRSCHWALD, AUGUST, Berlin.
Abwasserreinigungsanlagen ihre Leistungen und ihre Kontrolle vom chemisch-praktischen Standpunkt. Von Prof. Dr. K. Thumm. Price M.2.80.

HIGGINBOTHAMS, LIMITED, Madras.
Diabetes: Its Nature and Treatment. What Diabetic Patients ought to Know. By the Honourable Dr. T. M. Nair, M.D.

HOLDER, ALFRED, Wien und Leipzig.
Die Krankheiten des höheren Lebensalters. Von Prof. Hermann Schlesinger (Wien) 1. Teil: Allgemeines, Bewegungsapparat, Blut und Blutdrüsen, Stoffwechsel, Respirations- und Zirkulationstrakt. Price M.12.

KING, P. S., AND SON, London.
The Probation System. By Cecil Leeson. With an Introduction by J. H. Muirhead, LL.D., Professor of Mental and Moral Philosophy, University of Birmingham. Price 3s. 6d. net.

LAUPP'SCHEN, H., Tübingen.
Festschrift Herrn Dr. Heinrich Bircher, Direktor der Kantonalen Krankenanstalt Aarau (Schweiz) und Chefarzt der Chirurgischen Abteilung zu Seiner 25 Jährigen Amtstätigkeit Überreicht. Von Freunden und Ehemaligen Assistenten 1887–1912. Price M.18.

LEHMANN, J. F., München.
Chirurgische Diagnostik in Tabellenform für Studierende und Ärzte. Von Dr. med. J. Camach. 100 Tabellen, 10 Seiten fortlaufender Text und 440 schwarze und farbige Abbildungen auf 112 Tafeln. Price M.14.
Lehmann's Medizinische Atlanten. Band XII. Die Fadenpilzerkrankungen des Menschen. Von Dr. Robert Otto Stein, Assistent der Wiener Universitätsklinik für Geschlechts- und Hautkrankheiten. Mit 78 Abbildungen auf 3 schwarzen, 18 Drei- und 11 Vierfarbdrucktafeln. Gebd. Price M.10.
Abhandlungen über Salvarsan. Herausgegeben von Professor Paul Ehrlich. Band IV. Price M.9.

LITTLE, JAMES, Collins-street, Melbourne.
Therapeutics, Dietetics, and Hygiene: An Australian Text-book. By John William Springthorpe, M.A., M.D. Melb., M.R.C.P. Lond., Senior Physician to the Melbourne Hospital. Vol. II.: Therapeutics. Price 25s.

MACMILLAN COMPANY, New York.
Bacteriology for Nurses. By Isabel McIsaac, R.N. Second edition, revised. Price 5s. 6d. net.
Materia Medica for Nurses. By A. S. Blumgarten, M.D., Instructor in Materia Medica at the German Hospital Training School for Nurses, New York. Price 10s. 6d. net.

MACMILLAN AND Co., London.

Florence Nightingale to her Nurses: a Selection from Miss Nightingale's Addresses to Probationers and Nurses of the Nightingale School at St. Thomas's Hospital. Price 1s.

MALOINE, A., Paris.

L'Infection Puerpérale Diagnostic-Traitement. Par Prof. Constantin Daniel (Bucarest).

Les Caractères Médicaux dans l'Ecriture Chinoise. Par le Dr. Lucien-Graux. Price Fr. 4.

MARCUS, LOUIS, Berlin.

Geburten-Rückgang und Geburten-Regelung. Im Lichte der individuellen und der sozialen Hygiene. Von Prof. Dr. med A. Grotjahn (Berlin). Price M.6.

MARLBOROUGH, E., AND Co., London.

Chinese Self Taught. By John Darroch, Litt.D. Price 5s.

NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, New York.

The Myth and Birth of the Hero: a Psychological Interpretation of Mythology. By Dr. Otto Rank, of Vienna. Authorised translation by Drs. F. Robbins and Smith Ely Jelliffe. Price $1.

OPHTHALMOSCOPE PRESS, Thayer-street, W.

Eye-strain in Everyday Practice. By Sydney Stephenson, M.B., C.M. Edin., D.O. Oxon., F.R.C.S. Edin., Surgeon to Queen's Hospital for Children. Second edition. Price 3s. 6d. net.

ST. CATHERINE PRESS, THE, 34, Norfolk-street, Strand, W.C.

Pride of Body. By Hugh de Sélincourt. Price 1s. net.

SCIENTIFIC PRESS, LIMITED, London.

Medical Homes for Private Patients, 1914, with Alphabetically Arranged List of Medical Consultants. Edited by R. Pritchard Binnie. Price 6d. net.

THIEME, GEORG, Leipzig.

Uber die Ernährung des Auges. Von Dr. med. C. Hamburger (Berlin). Price M.8.

TOPELMANN, ALFRED, Giessen.

Zur historischen Biologie der Krankheitserveger. Materialien. Studien und Abhandlungen. Herausgegeben von Karl Sudhoff und Georg Sticker. Heft 7. Die Variolation im achtzehuten Jahrhundert. Ein historischer Beitrag zur Immunitätsforschung. Price M.3.

UNIVERSITY TUTORIAL PRESS, W. B. CLIVE, High-street, Oxford-street, W.C.

The London Matriculation Directory, June, 1914, containing Examination Papers with Answers. Price 1s. net.

URBAN UND SCHWARZENBERG, Berlin und Vienna.

Technik der Speziellen Klinischen Untersuchungsmethoden. Herausgegeben von Professor Dr. T. Brugsch (Berlin) und Professor Dr. A. Schittenhelm (Königsberg). II. Teil. Preis des kompletten Werkes, M.36.

Compendium der Arzneimittellehre mit besonderer Berücksichtigung der neuen Arzneimittel, der Organotherapie, Serologie und Nährpräparate. Von Dr. Lipowski. Price M.5.

Oesterreichisches Bäderbuch. Offizielles Handbuch der Bäder, Kurorte und Heilanstalten Oesterreichs. Herausgegeben von kais. Rat Dr. Karl Diem. Two volumes.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol.

The Newer Physiology in Surgical and General Practice. By A. Rendle Short, M.D., B.S., B Sc. Lond., F.R.C.S.Eng., Hunterian Professor, Royal College of Surgeons. Third edition, revised and enlarged. Price 5s. net.

VOGEL, F. C. W., Leipzig.

Kurzgefasstes Handbuch der gesamten Frauenheilkunde Gynäkologie und Geburtshilfe für den praktischen Arzt. Herausgegeben von Privatdozent Dr. W. Liepmann in Berlin. Band II. Pathologische Anatomie und Histologie. Von Privatdozent Dr. O. Frankl, Wien. Price M.30.

YEAR BOOK PRESS, 31, Museum-street, W.C.

Girls' School Year Book, 1914. Price 3s. 6d. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BEATH, R. M., M.B. Belf., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

DIXON, GERALD C., M B., Ch B. Manch., has been appointed Second House Surgeon to the Manchester Royal Eye Hospital.

FLEMING, G., M.B., C.M., M.R.C.P.E., has been appointed Medical Superintendent to the Durham County Sanatorium.

JOHNSTON, T. B., M.B., Ch.B. Edin., has been appointed to the newly created office of Lecturer and Demonstrator in Anatomy at University College, London.

KINLOCH, J. PARLANE, M.D. Glasg., D.P.H. Cantab., has been appointed to the newly created Lectureship in Public Health at the University of Aberdeen.

LOCKELY, CHARLES J., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Anæsthetist to the Royal Dental Hospital, London.

MILLER, S., M.B. Belf., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

MURRAY, W. MAXWELL, M.B., Ch.M. Edin., F.R.C.S., has been appointed Surgeon to the Ear, Nose, and Throat Department at the Dewsbury and District Infirmary.

OLIVER, M. W. B., M.A., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Assistant Ophthalmic Surgeon to the Miller General Hospital.

PURCE, G. R. B., M.B. Belf., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

STIRLING, WILLIAM, M.B., Ch.B. Manch., has been appointed Resident Surgical Officer to the Manchester Royal Eye Hospital.

WILLIAMSON, JAMES, M.B., Ch.B. Glasg., has been appointed Senior House Surgeon to the Manchester Royal Eye Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £120 per annum, with board and residence.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BETHNAL GREEN INFIRMARY, Cambridge Heath, E.—Second and Third Assistant Medical Officers. Salary at rate of £180 and £160 per annum respectively, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Locum Tenens as Junior House Surgeon. Salary 5 guineas weekly, with board and lodging.

BIRMINGHAM, QUEEN'S HOSPITAL.—House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing. Also Secretary and General Superintendent. Salary £400 per annum.

BIRMINGHAM, ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

BIRMINGHAM UNION, SELLY OAK INFIRMARY.—Resident Assistant Medical Officer. Salary £160 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, &c.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

BRADFORD ROYAL INFIRMARY.—House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing. Also Locum House Surgeon. Salary 6 guineas per week, with board, residence, and washing.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months. Salary at rate of £150 per annum.

BRISTOL CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, washing, and attendance.

CAMBERWELL INFIRMARY AND GORDON-ROAD INSTITUTION.—Assistant Medical Officer. Salary £200 per annum. Also Assistant Medical Officer for Infirmary. Salary £190 per annum. Apartments, board, and washing in each case.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—Two House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £160 per annum, with board, washing, apartments, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon and House Physician. Salary £100 per annum each, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DORCHESTER COUNTY ASYLUM.—Second Assistant Medical Officer. Salary £300 per annum, with board, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Physician. Salary at rate of £75 per annum, with board, residence, and washing.

GLASGOW UNIVERSITY.—Lecturer in Pharmacology. Salary £350 to £400 per annum. Also Assistant in Department of Physiology. Salary £150 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Senior House Surgeon. Also Junior House Surgeon. Salaries £100 and £80 per annum respectively, with board, lodging, attendance, and washing.

HARTLEPOOL, BOROUGH OF.—Medical Officer of Health and School Medical Officer. Salary for combined appointment £400 per annum.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Assistant Medical Officer.

HEXHAM RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary at rate of 250 guineas per annum.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Female Assistant Resident House Surgeon. Salary £45 per annum, with board and laundry.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £100 per annum, with board, &c.

JOHANNESBURG, SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH.—Superintendent of Routine Division. Salary £700 per annum. Also Curator of Museum, Photographer, and Photomicrographer, unmarried. Salary £400 per annum.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Surgeon and House Physician. Salary £100 and £85 respectively, with board, residence, and laundry.

LEEDS, CITY HOSPITALS FOR INFECTIOUS DISEASES AND TUBERCULOSIS.—Two Assistant Medical Officers, unmarried, for six months. Salary at rate of £130 per annum each, with board, lodging, and washing.

LEEDS GENERAL INFIRMARY.—Two House Physicians for six months, without salary, but with board, residence, and laundry. Also Assistant Clinical Pathologist. Salary £150 per annum and luncheon. Also Resident Medical Officer at the Ida and Robert Arthington Hospitals for six months. Salary £80 per annum, with board, residence, and laundry.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LEICESTER ROYAL INFIRMARY.—Assistant House Surgeon and Assistant House Physician for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—Research Assistant at Runcorn Research Laboratory. Salary £150 per annum.

LONDON LOCK HOSPITAL.—House Surgeon to Female Hospital, Harrow-road, W. Salary £100 per annum, with board, residence, and washing.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant House Surgeon for six months. Salary at rate of £105 per annum. Also Assistant Resident Medical Officer for six months. Salary at rate of £80 per annum, with board and residence.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

MAIDSTONE, WEST KENT GENERAL HOSPITAL. — Assistant House Surgeon, unmarried. Salary £80 per annum, with board, lodging, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Secretary. Salary £250 per annum. Also Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary £80 per annum. Also Resident Medical Officer for In-patient Department, Bowdon, Cheshire. Salary £100 per annum, with board, apartments, washing, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER, MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary £150 per annum, with board, lodging, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for Out-Patients and Accidents for six months. Salary at rate of £100 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Four House Surgeons.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary at rate of £60 and £40 respectively, with board and washing.

NATAL, PROVINCE OF.—Medical Officer for Medical Inspection of Schools. Salary £700 per annum.

NEWARK-UPON-TRENT HOSPITAL.—Resident Medical Officer, unmarried. Board, lodging, and laundry provided.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Medical Registrars and Surgical Registrars. Salary at rate of £50 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with apartments, board, washing, attendance, &c.

NOTTINGHAM, BAGTHORPE INSTITUTION AND INFIRMARY.—Resident Assistant Medical Officer, unmarried, for six months. Salary at rate of £165 per annum, with apartments, &c.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

OLDHAM ROYAL INFIRMARY.—Senior House Surgeon and Third House Surgeon for six months. Salary at rate of £140 and £100 per annum respectively, with residence, board, and laundry.

OXFORD, CITY OF.—Assistant Medical Officer of Health and School Medical Officer. Salary £300 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing.

PLYMOUTH INCORPORATION OF GUARDIANS WORKHOUSE AND INFIRMARY.—Resident Assistant Medical Officer. Salary £200 per annum, with apartments, rations, and washing.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £90 per annum, with board, &c.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing. Also Female House Physician and Casualty House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

READING EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £300 per annum.

RETFORD, STATE CRIMINAL LUNATIC ASYLUM.—Assistant Medical Officer, unmarried. Salary £225 per annum, with quarters, coals, light, and attendance.

ROCHDALE INFIRMARY AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

ROYAL DENTAL HOSPITAL, Leicester-square, W.C.—Two House Anæsthetists.

ROYAL EYE HOSPITAL, Southwark, S.E.—Junior House Surgeon. Salary £50 per annum, with board and quarters.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five Appointments.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Demonstrator of Physiology. Salary £150 per annum.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD CITY HOSPITALS (INFECTIOUS DISEASES AND TUBERCULOSIS).—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL (OUT-PATIENT DEPARTMENT).—House Surgeon. Salary £120 per annum, with board and residence.

SIAMESE GOVERNMENT.—Two Medical Officers.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove, S.E.—Thir Assistant Medical Officer. Salary at rate of £160 per annum, with board, lodging, and washing.

STOKE-UPON-TRENT UNION INSTITUTE AND HOSPITAL, London-road, Newcastle, Staffs.—Assistant Resident Medical Officer, unmarried. Salary £160 per annum, with rations, apartments, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance. Also House Physician. Salary £125 per annum, with board, apartments, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

WANDSWORTH UNION INFIRMARY, Ouseley-road, Balham, S.W.—Second Assistant Medical Officer, unmarried. Salary at rate of £150 per annum, with board, lodging, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Resident Medical Officer. Salary £160 per annum. Also Senior House Physician and Senior House Surgeon. Salary £120 per annum. Also Junior House Physician and Junior House Surgeon. Salary £100 per annum. Board, residence, and washing provided in each case.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Resident Casualty Officer and Anæsthetist. Salary at rate of £40 per annum, with board, lodging, &c.

WEST RIDING COUNTY COUNCIL.—School Medical Inspector. Salary £325 per annum.

WEST RIDING OF THE COUNTY OF YORK, STORTHES HALL ASYLUM, Kirkburton, near Huddersfield.—Assistant Medical Officer. Salary £230 per annum, with rooms, board, attendance, and washing.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

WOOLWICH INFIRMARY, Plumstead.—Resident Assistant Medical Officer, unmarried. Salary £180 per annum, with apartments, rations, and washing.

YORK COUNTY HOSPITAL.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Ashton-under-Lyne, in the county of Lancaster; and at Uppingham, in the county of Rutland.

Births, Marriages, and Deaths.

BIRTHS.

HOLLAND.—On July 21st, at 55, Queen Anne-street, W., the wife of Eardley Holland, M.D., of a daughter.

MCCARDIE.—On July 12th, at Frederick-road, Edgbaston, Birmingham, the wife of Dr. W. J. McCardie, of a son.

MARRIAGES.

FREER—PARKER.—On July 18th, at the Parish Church, Arbory, Isle of Man, Robert Mylcraine Freer, M.D., M.S., D.P.H., to Dorothy, daughter of George and Edith Parker, of Balladoole, Castletown, Isle of Man.

DEATHS.

MASON.—On July 19th, at York-road, Birmingham, Hugh Herbert Mason, M.R.C.S., aged 66 years.

NIXON.—On July 19th, at his residence, Co. Dublin, the Right Hon. Sir Christopher Nixon, Bart., P.C., D.L., LL.D., M.D. Dub., F.R.C.P. Irel., aged 64.

REITH.—On July 14th, at Gilcomston Park, Aberdeen, Alexander Reith, M.D., aged 84 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN NORTHERN NIGERIA.

THE latest detailed report received at the Colonial Office on the affairs of Northern Nigeria states that malaria continues to be the most prevalent cause of ill-health. It has been pointed out by medical and sanitary authorities that the steadily increasing mining and commercial activities of the country have been responsible for the introduction of numbers of Europeans who have never previously served in the tropics, while the number of natives who invoke the aid of the medical department is yearly growing. It follows that it is quite possible that for some years to come malarial fever may increase statistically while in point of fact it may be really decreasing. The efforts of medical officers and residents to combat small-pox amongst the natives by vaccination continue to be successful; tactful handling yearly induces a larger number to offer themselves for vaccination. The infant mortality from small-pox and fever is enormous, and though the native is slow to take any precaution for himself he is easily approached when the danger to his children is made manifest to him. Only ocular demonstrations, however, will induce him to believe that "water grubs," as he knows them, become mosquitoes, and, as ocular demonstration of the further connexion between mosquitoes and fever cannot yet be given, progress in combating fever must be slow.

Sleeping sickness is well known in the valley of the Niger and in the southern provinces generally, and its existence is also reported in the Central Province. The native "cure" is the application of raw rubber to an incision in the neck which exposes the gland; rubber and gland together are torn off when the rubber has coagulated. Several provinces have established segregation villages for lepers, and in Yola the results are reported to be satisfactory, but the Resident of Bornu states that segregation there is extremely unpopular, and this may probably be taken as the general attitude.

The time of the two European officers of the Sanitary Department has been occupied principally in advising the executive on all matters affecting hygiene and sanitation, and in visiting the provinces and reporting on the sites of Government stations, or advising where future sites should be, and particular spots on which residential quarters should be erected. With the active coöperation of the political officers the sanitary officers are endeavouring to impress on native chiefs the need for, and benefits that will accrue from, the proper sanitation of their towns. In the more enlightened northern provinces possessing effective native administrations much progress is being made, but it will be difficult to induce the natives of the southern pagan belts to make improvements until effective native administrations have been created in those districts. The disposal of sewage and refuse are matters in which the native generally is not concerned, but in many of the native towns of the north, notably Kano, where intensive cultivation is practised, the demand for manure tends to the removal of insanitary refuse, and the cultivators in those districts understand the manurial value of combustible rubbish burned on the ground. The water-supply is principally derived from springs, streams, wells, and marshes. Excepting in the case of well-built European dwellings the houses have thatched roofs, so that any large collection of rain water is not possible. At most of the stations Europeans are daily supplied with condensed water for drinking and cooking purposes. All the water supplied to prisons and native hospitals is boiled. Everything possible is being done to induce the natives to safeguard their wells by the construction of parapets to keep out the surface drainage, and by selecting sites for the sinking of wells away from the neighbourhood of salgas (native latrines) to guard against contamination. There is no system of pipe or other form of underground drainage, and surface drainage is effected by the natural fall of the ground towards streams, but over the greater part of the country percolation is free and, as a rule, fairly rapid. A considerable amount of labour is expended on clearing operations at the various stations during the months of July, August, September, and October, the vegetation then being exuberant. Bush is cleared from the inhabited parts of stations, and the clearing is made more extensive in regions where tsetse flies prevail. At the native towns the practice of keeping undergrowth away by surrounding the town with short crops, such as ground-nuts, sweet potatoes, and beans, is steadily spreading. Elementary hygiene is being taught at the Government schools at Nassarawa, and one of the medical officers at Kano is now attached to the schools and Kano City, his duties being tutorial as well as medical.

FORCIBLE FEEDING: A SIDE ISSUE.

A COMMUNICATION has been sent to us for publication signed by Dr. James W. McIntosh (chairman), Dr. L. Haden Guest, Sir Victor Horsley, Mr. C. Mansell Moullin, and Dr. Frank Moxon, of the Forcible Feeding Protest Committee of Medical Men, which refers to the possibility that prisoners if they do not give up voluntary starvation might be certified as insane and incarcerated in an asylum. The communication encloses a copy of a letter received on July 14th from a convicted male criminal who had refused food and undergone forcible feeding (according to his own account) 238 times at Northampton and Wormwood Scrubbs prisons, and had then been transferred to the Bucks County Asylum on a warrant of detention by order of the Home Secretary. Dr. McIntosh, Sir Victor Horsley and Dr. Guest state that they visited the asylum last week and found no evidence of insanity in this prisoner, but that he had been certified on the reception order by the medical men as insane on the ground that he refused food. They further allege that a week after transference to the asylum the medical superintendent made a report which not only contained no evidence of the prisoner being insane, but definitely stated that he talked quite coherently, that his memory was good, and that he had eaten his food since admission.

GLYCOSURIA AND THE SUGAR INDUSTRY.

To the Editor of THE LANCET.

SIR,—In your issue of April 18th there is a question from Dr. F. C. MacNalty, of Winchester, as to the occurrence of glycosuria amongst those working on sugar-cane estates. One of the hospital assistants here, a Chinaman, on his own initiative, examined some years ago many specimens of urine obtained from men engaged in the crushing of sugar-cane. He found that Fehling's solution was reduced by every specimen he tested. There is no muzzling of the ox that turns the stones between which the cane is crushed, and equally little restraint is put upon the men and boys engaged in the work.

I am, Sir, yours faithfully,

Swatow, China, June 29th, 1914. G. DUNCAN WHYTE.

PLAGUE IN JAVA.

A CONSULAR report on the affairs of Java (Dutch East Indies) states that there have been epidemics of cholera and small-pox, but that the health of the island was, on the whole, better in 1913 than in 1912. The measures taken to combat the plague in East Java have been continued vigorously, but the disease shows no signs of abatement. The number of cases of plague during 1913 was 12,055, and the number of deaths 11,305. There were about 600 European British subjects in Java at the end of 1913.

CONJUNCTIVITIS DUE TO FACE POWDER.

IN the *Journal of the American Medical Association* of April 8th, Dr. N. M. Black has called attention to a cause of conjunctivitis which appears not to have been previously recognised—the use of "face powder." For several years cases have come under his observation with a similar train of symptoms and microscopic appearances of the conjunctival secretion. The patients, invariably women, complain of vision frequently being blurred, inability to use the eyes for any length of time for near vision, and severe itching of the lids. The slightest rubbing of the lids produces marked bulbar hyperæmia and only aggravates the itching. In severe cases the lids become œdematous from the constant rubbing. There is a mucilaginous secretion in varying amounts, which is elastic, and on removal pulls out in long strings. Microscopic examination of the secretion shows numerous epithelial cells mixed with what appear to be pentagonal crystals, the majority having a central black spot. In a few cases many fine amorphous crystals are also present. Smears taken from these cases were shown to a number of pathologists, bacteriologists, and chemists, but a satisfactory explanation could not be obtained. Some suggested that the "crystals" might be secreted by the lacrymal gland, others that they were artefacts. Slides prepared from the eyes of two sisters having the usual train of symptoms were submitted to Dr. C. H. Bunting, professor of pathology in the University of Wisconsin College of Medicine. He wrote as follows: "After trying various solvents I found that strong alkalies caused the crystals to swell and become spherical, with a doubly contoured wall. When they swelled enough to rupture, iodine showed that they discharged soluble starch into the surrounding fluid. So you are dealing with plant cells, probably from face powder. They are not lycopodium." After examining various face and dusting powders Dr. Bunting said that the "crystals" came from rice powder. He thought they must be the cells from the hard exterior. The fine "amorphous crystals" mentioned above he found

in face but not in rice powder. He could not determine their nature. Several other patients presenting the same symptoms and microscopic conditions used face powder made by the same firm. Dr. Black gives the following explanation. When the powder is applied to the face with a puff some fine dust arises and lodges on the moist conjunctiva. The rice flour, rendered mucilaginous by the tears, is not washed away. The woody cells of the hard exterior of the rice grain swell, and, being angular, produce conjunctival irritation, which is aggravated by rubbing. Those who use chamois to apply the powder are less likely to cause fine dust to arise. This accounts for the conjunctivitis not being produced in every person using face powder. The symptoms are quickly relieved by flushing the conjunctival sac with boric or normal saline solution and the use of an ointment made of equal parts of lanoline and petrolatum, which seems to agglutinate the cells and allow their being easily flushed out.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—May I ask the courtesy of your columns to state that an article purporting to express my opinions, and quoting from my medical writings, which has appeared yesterday in a daily journal, has been issued entirely without my consent or authority, and to my great annoyance.

I am, Sir, yours faithfully,

London, July 15th, 1914. R. FORTESCUE FOX.

GOGGLES FOR POLAR EXPLORERS.

THE officers of the forthcoming Antarctic Expedition, which is to be led by Sir Ernest Shackleton, have devoted special attention to the question of protection against snow blindness, which, as is well-known, has caused a great deal of suffering and inconvenience in previous expeditions to the Antarctic. Every member of the expedition has been supplied with a special pair of goggles, which it is anticipated will provide all possible protection. The form of these goggles in ordinary cases is a pair of gauze eye cups made of aluminium-nickel alloy, joined together by an adjustable leather bridge. The edges of the cups which touch the skin are leather bound and the goggle is fixed by an adjustable leather strap passing round the head. Each goggle has been glazed with lenses ground in euphos glass made to the formula of Professor Schantz, in the tint commercially known as No. 4. This glass has been proved experimentally at the National Physical Laboratory and elsewhere to absorb the whole of the ultra-violet rays. Up to the present the only instance recorded in which this glass has been used in polar exploration was on Amundsen's Expedition, when he and his assistant, Hansen, both wore Professor Schantz's glass, and were the only two members of the expedition doing so. They record that they were the only two members that did not suffer from snow blindness in any degree. In the case of one of the surgeons of the expedition, who is astigmatic to the extent of 3½ diopters, the only difference made has been to fix a leather-bound rigid bridge instead of the adjustable one so that the whole goggle front itself will be perfectly rigid, all minor adjustments for axis can be easily made in fixing the leather strap round the head. In the case of one of the geologists, who is myopic to the extent of 4 diopters, a film of euphos glass has been fused on to a white blank, on which blank the whole of the correction has been ground, so that equal tint protection is provided from centre to edge, irrespective of the varying thicknesses of the glass. Each man has been provided with a spare pair of lenses, and the frame is so made that on levering up a little of the leather binding on the edge of the cup a pin can be easily removed which opens the rims, and after replacing the broken lens the rims can be just as easily fastened together again by re-insertion of the pin. The expedition has also been supplied with tubes of a special preparation with which the lenses can be cleaned and polished, and which will prevent the condensation of the wearer's breath on the glass. Sir Ernest Shackleton has reported, after using specimen goggles made for experiment on his Norway Test Expedition, that they proved to be satisfactory in every particular, and it is anticipated that as a result of the wearing of these glasses there will be very little trouble caused by the effects of snow glare on the eyes of the members of the expedition.

URINE-COLLECTING BOTTLES.

IN reply to U.C.B.'s inquiry in THE LANCET of July 18th, a correspondent writes to say that the urine bottle referred to was suggested by Dr. H. Carter Thorp, of Ryde, and described in THE LANCET of August 23rd, 1902. It is made by Messrs. Down Bros., Limited, St. Thomas's-street, S.E., and shown in their catalogue.

PARTNERSHIP.[1]

Mr. H. C. Emery has in a recent book compiled a handy and convenient summary of the law of partnerships under the Partnership Act, 1890, and the Limited Partnership Act, 1907, which should be of use to persons entering upon commercial partnerships as well as to lawyers in practice. The facts and circumstances of medical partnership have little relation to those dealt with in such a volume, but it may be suggested that the provisions of the Limited Partnership Act may sometimes be of use to medical men who desire to invest capital in minor commercial undertakings.

Messrs. Angus and Co., of 83, Wigmore-street, London, W., have issued an abridged catalogue of the microscopes and accessory apparatus manufactured by the firm of C. Reichert, of Vienna, for whom they are the agents in this country. It is interesting to note that since the foundation of the firm in 1876 they have produced and sold some 55,000 microscopes—a testimony to the scientific accuracy of their instruments.

Mr. Boulton Hall.—The passage is correctly quoted from THE LANCET, but much has since been written on the subject, indicating that nicotine is not the only harmful ingredient in tobacco-smoke.

A. V. (Barcelona).—This treatment is no longer regarded seriously. The last reference was a special article on Some Constituents of Violet Leaves, which appeared in THE LANCET of April 22nd, 1905.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

[1] Partnership: A Concise Treatise on the Law and Practice Relating to Partnerships. London: Effingham Wilson. 1914. Pp. 117. Price 5s. net.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.

MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 P.M., Wards, Dr. Phear.

TUESDAY.—9 A.M., Laryngological Department, Mr. Mant. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 P.M., Wards, Dr. White. 4 P.M., Wards, Dr. M. Leslie.

WEDNESDAY.—2 P.M., Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.
THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phear, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.
FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Lealle, Dr. B. King.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3 P.M., Dr. A. Wylie: Diseases of the Larynx. 4 P.M., Dr. D. McKenzie: Endoscopy.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced. In 1914:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
" 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
" 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.
July–September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (July 23th to August 3rd at Perth, August 8th to 12th at Adelaide, August 13th to 19th at Melbourne, August 20th to 26th at Sydney, August 27th to Sept. 1st at Brisbane).
Aug. 2nd–10th (Paris).—Tenth Congress of Esperantists.
" 3rd–8th (London).—Sixth International Dental Congress.
" 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.
" 29th–Sept. 14th (Toronto).—Canadian National Exhibition.
Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.
" 10th–12th (Fort William and Port Arthur, Ontario).—Fourth Annual Congress of the Canadian Public Health Association.
" 21st–26th (Victoria, B.C.).—Dominion Exhibition.
" 21st–26th (Vienna).—Third International Congress on Diseases of Occupation.
" 30th–Oct. 4th (Brussels). Fourteenth French (de langue française) Congress of Medicine.
Oct. 31st–Nov. 2nd (Berlin).—First Congress of the International Society for Sexual Research.
Nov. 15th–21st (London).—Health Week. (Under the direction of the Health Week Committee appointed by the Royal Sanitary Institute.)
(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs. 50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)
THE LANCET Office, July 22nd, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remark
July 16	29·95	W.	0·01	125	71	57	59	64	Cloudy
" 17	30·00	W.	...	123	75	58	59	64	Cloudy
" 18	30·02	S.W.	...	131	76	57	61	65	Cloudy
" 19	29·84	S.	0·05	112	74	62	64	66	Cloudy
" 20	29·65	S.E.	...	119	75	62	65	67	Cloudy
" 21	29·73	E.	...	111	76	65	62	67	Overcast
" 22	29·68	S.W.	...	113	73	62	65	68	Cloudy

The following magazines, journals, &c., have been received:—Clinique Ophthalmologique, American Journal of Obstetrics, Journal of Physiology, Albany Medical Annals, Medical Review of Reviews, British Journal of Dental Science, Calcutta Medical Journal, Midland Medical Journal, Indian Journal of Medical Research, American Medicine, American Journal of Gastro-Enterology, Therapist, Proceedings of the Royal Society of Medicine, Medical Journal of South Africa, British Journal of Dermatology, British Dental Journal, Canadian Medical Association Journal.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Anderson College of Medicine, Glasgow, Secretary of; Messrs. Armour and Co., Lond.; Ardath Tobacco Co., Lond.; Miss Maud Aldis, Lond.; Dr. K. B. Allan, Lond.; A. P. F.; Dr. T. C. Askin, Woodbridge; Mr. E. Arnold, Lond.; *American Medicine*, New York; Anglo-American Pharmaceutical Co., Croydon, Secretary of.

B.—Bristol Myers Co., Brooklyn; Bromley Education Committee, Secretary of; Burton-upon-Trent Gas Works, Manager of; Mr. H. P. Byers, Melita, Canada; Mr. V. A. Bona, Moscow; Dr. F. E. Batten, Lond.; Birkenhead Borough Hospital, Matron to the; Dr. D. Bower, Bedford; Mr. H. Blakeway, Lond.; Bournemouth, Medical Officer of Health of; Dr. W. Blair Bell, Liverpool; Messrs. W. Baker and Co., Oxford; Blackburn and East Lancashire Royal Infirmary, Secretary of; British Science Guild, Lond., Secretary of; Bristol General Hospital, Secretary of; Mr. F. J. C. Blackmore, Lond.; Dr. Horace T. Brown, Lond.; Dr. A. G. Bateman, Lond.; Mr. A. D. Ballow, Lond.; Sir Thomas Barclay, Birmingham; Dr. E. F. Bashford, Lond.

C.—Mr. H. A. Collins, Croydon; Messrs. Casein, Lond.; Messrs. J. and A. Churchill, Lond.; Messrs. Cassell and Co., Lond.; County of London Panel Committee, Lond., Secretary of; Mr. C. A. Croxson, Southend; Dr. J. Craig, Llandudno; Mr. C. D. Clayton, Lond.; Camberwell Dispensary for Prevention of Consumption, Lond., Secretary of; Dr. E. A. Cockayne, Lond.; Messrs. E. Cook and Co., Lond.; Chelsea Guardians, Clerk to the; Central London Throat and Ear Hospital, Medical Staff of; Charity Organisation Society, Lond., Council of; Mr. Lionel Cresswell, Burley-in-Wharfedale; Dr. R. F. Chance, Lond.; Dr. F. G. Clemow, Constantinople.

D.—Messrs. W. Dawson and Sons, Lond.; Dr. E. Dupuy, Versailles; Lieutenant-Colonel B. Doyle, I.M.S., Lond.; Dr. S. E. Dore, Lond.; Dr. T. Vincent Dickinson, Lond.; Messrs. S. Deacon and Co., Lond.; Miss E. Davy, Lond.; Mr. Leonard S. Dudgeon, Lond.; Messrs. Down Bros., Lond.; Messrs. Dale, Reynolds, and Co., Lond.

E.—Messrs. Evans, Sons, Lescher, and Webb, Lond.

F.—Mr. Rupert Farrant, Lond.; F. T. A.; Dr. J. M. Fortescue-Brickdale, Bristol.

G.—Greenock Infirmary, Secretary of; Dr. Gault, Lond.; Great Eastern Railway Co., Lond., Continental Traffic Manager of; *Gazette Médicale de Paris*, Paris; Dr. A. D. Gardner, Lond.; Professor Gilbert, Paris; Mr. H. Wippell Gadd, Exeter; Mr. E. Godfrey, jun., Lond.; Sir James Goodhart, Lond.

H.—Dr. W. W. Hardwicke, Lond.; Dr. H. E. Haynes, Brentwood; Horton Infirmary, Banbury, Assistant Secretary of; Messrs. W. Heffer and Sons, Cambridge; Dr. A. F. Hewat, Edinburgh; Mr. C. H. Huish, Lond.; Mrs. A. Hardman, Bispham; Hexham Rural District Council, Clerk to the; Mr. J. Heywood, Manchester; Dr. E. Haller, Berlin; Dr. Charles T. W. Hirsch, Lond.; Dr. C. Denys Hanan, Newcastle, Co. Wicklow; Huddersfield, Medical Officer of Health of; Professor Walker Hall, Bristol; Dr. Pantland Hick, Liverpool; Mr. Gwilym Hughes, Cardiff; Messrs. Heppel and Co., Lond.; Dr. E. Holland, Lond.

J.—Mr. W. Johnson, Lond.; Mr. W. A. Jones, Morriston; Dr. F. Jeffree, Dorking.

K.—Messrs. H. S. King and Co., Lond.; Kirkmabreck Parish Council, Creetown, Clerk to the; Kent County Ophthalmic Hospital, Maidstone, Secretary of; Professor A. Keith, Lond.; Mr. M. C. King, Lond.; Right Hon. Lord Knutsford, Lond.

L.—Mr. I. L. Lee, Philadelphia; Messrs. E. and S. Livingstone, Edinburgh; Mr. P. T. Leigh, Leeds; Leeds General Infirmary, Secretary of; London School of Clinical Medicine; Leicester Royal Infirmary, Secretary of; Leeds Association for Prevention and Cure of Tuberculosis, Secretary of; Leeds University, Dean of Faculty of Medicine; Leeds Corporation, Clerk to the; Dr. Llewellyn J. Llewellyn, Bath.

M.—Dr. R. L. Moorhead, South Godstone; Medical Correspondence College, Lond., Secretary of; Maltine Manufacturing Co., Lond.; Manchester Hospital for Consumption, Secretary of; Mr. R. Mosse, Berlin; Dr. Charles Miller, Lond.; Medico-Psychological Association of Great Britain and Ireland, Ewell; Sir Shirley Murphy, Lond.; Dr. G. Ménard, Niort; Manchester Corporation, Medical Officer of Health of; Dr. Egbert Morland, Arosa; Manchester Royal Infirmary, Secretary of; Mr. W. Dakin Mart, Liverpool; Sir Arthur W. May, Lond.; Messrs. Matthews and Brooke, Bradford.

N.—National Health Insurance Commissioners, Lond., Secretary to; Newark-upon-Trent Hospital, Secretary of.

O.—Oldham Infirmary, Secretary of; Oxford Corporation, Town Clerk of; Mr. Joseph Offord, Lond.; Sir William Osler, Oxford.

P.—Mr. H. E Pridham, Sydney; Dr. Llewellyn Phillips, Lond.

Q.—Queen's Hospital, Birmingham, Secretary of.

R.—Radium Products Co., New York; Radium Institute, Lond., Medical Superintendent of; Royal Victoria Infirmary, Newcastle-upon-Tyne, Secretary of; Messrs. Robertson and Scott, Edinburgh; Dr. H. Rainy, Edinburgh; Dr. John Robertson, Birmingham; Reading Education Committee, Clerk to the; Messrs. Reynolds and Branson, Leeds; Royal Portsmouth Hospital, Secretary of; Dr. C. G. Roehr, Fort Pierce, Florida; Royal Institute of Public Health, Lond., Secretary of; Dr. W. C. Rivers, Barnsley.

S.—Sheffield University, Secretary of; Messrs. Salt and Son, Birmingham; *Shrewsbury Chronicle*, Manager of; *Staffs Sentinel*, Hanley; Messrs. W. Seelig and Co., Lond.; Storthes Hall Asylum, Kirkburton, Medical Superintendent of; Dr. Edward Smeed, Lond.; Professor W. Stirling, Manchester; Mr. M. Steinman, Lond.; Sheffield City Hospital, Steward of; Salford Union Infirmary, Clerk to the; Messrs. Smith and Gill, Sheffield; Swansea Hospital, Secretary of; Saccharin Corporation, Lond.; Dr. N. F. Surveyor, Bombay; Messrs. G. Street and Co., Lond.; Dr. P. W. Saunders, Lond.; Mr. Sydney Stephenson, Lond.; Southport, Medical Officer of Health of; Dr. P. Schault, Port of Spain; Dr. Agnes Savill, Lond.; Dr. D. Lloyd Smith, Llandrindod Wells.

T.—Dr. E. F. Thomas, Charlton; Mr. S. Turner, Winchester; Mr. F. Topic, Prague; Captain A. G. Tressider, I.M.S., Poona; Mr. P. J. Thomson, Brussels; Mr. A. Twietmayer, Leipzig; Mr. L. L. Thain, Ewyas Harold; Messrs. Clement Talbot, Lond.; Mr. C. Taylor, Retford; Dr. John H. Trench, Birmingham.

U.—Messrs. Urban and Schwarzenberg, Vienna; University College, Lond., Provost of.

V.—Dr. L. Verney, Rome; V. W.; Victoria Children's Hospital, Hull, Assistant Secretary of.

W.—Dr. Harold Waller, Bakewell; Messrs. F. Williams and Co., Lond.; *Western Daily Mercury*, Plymouth, Manager of; Messrs. J. Wright and Sons, Bristol; Messrs. J. Wright and Co., Lond.; Messrs E. Westmacott and Co., Lond.; Dr. W. Watkins-Pitchford, Lond.; West Kent General Hospital, Maidstone, Secretary of; Warneford, Leamington, &c., Hospital, Secretary of; Mr. F. C. Wright, Mow; Mr. F. Faulder White, Lond.; Miss G. E. White, Lond.; Messrs. J. Williams and Son, Lond.; West Ham and Eastern General Hospital, Lond., Secretary of; West Riding County Council, Wakefield, Clerk to the; Weston-super-Mare Hospital, Secretary of; Walsall and District Hospital, Secretary of; Wolverhampton, &c., Eye Infirmary, Secretary of; Mr. W Watson, Hull; Dr. G. Duncan Whyte, Swatow.

Y.—Mr. A. F. Yarrow, Hindhead.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. W. L. Allott, Hoylandnether; Mr. S. E. Atkinson, Loughborough.

B.—Dr. R. W. Beesley, Bolton; Dr. W. Bligh, Caterham; Dr. L. Burnett, Ranglora; Bristol Education Committee, Accountant to the; Lady Brydges, Norton; Messrs. Berk and Co., Lond.; Messrs. Butterworth and Co., Lond.; Messrs. Browne and Stephenson, Liverpool; Messrs. Boswell and Tomlins, Wolverhampton; Dr. W. Broughton-Alcock, Paris; Messrs. W. Browning and Co., Lond.; Barnwood House Hospital, Gloucester, Medical Superintendent of; Mr. G. P. Butcher, Plymouth; Dr. K. Bremer, Cradock.

C.—Dr. C. W. Chapman, Lond.; Mr. W. H. Croly, Burnham; Dr. T. Carruthers, Kilbarchan; Dr. J. H. Conarroe, Philadelphia; Corbett Estate Office, Droitwich; Messrs. Callard, Stewart, and Watt, Lond.; Mr. J. W. Astley Cooper, Cockermouth; Chesterfield, &c., Hospital, Secretary of; Cannon Iron Foundries, Bilston; Dr. F. D. Cairns, Edinburgh; Mr. R. Creasy, Windlesham; C. H. P.

D.—Dr. R. T. H. Davies, Tredegar; Dr. J. Dunlop, Glasgow; Darlington Hospital, Secretary of; D. M. M.; Durham County Hospital, Secretary of; Dr. G. B. S. Darter, Victoria West, South Africa.

F.—Dr. Oliver Field, Lond.; Messrs. J. S. Fry and Sons, Bristol; Fellows Medical Manufacturing Co., New York; F. W.

G.—Mr. T. K. Grant, Lond.; Guest Hospital, Dudley, Secretary of; Dr. N. C. Graham, Belfast; Mr. J. Gibson, Birmingham; Messrs. Gray and Kellas, Aberdeen.

H.—Mr. A. B. Howitt, Lond.; Messrs. J. Haddon and Co., Lond.; Messrs. A. Heywood and Son, Birmingham; Hoffmann-La Roche Chemical Works, Lond., Secretary of; Haydock Lodge, Newton-le-Willows, Medical Superintendent of; Mr. F. Heatherley, Rock Ferry; Messrs. T. Holland and Son, Lond.; Messrs, J. Heywood and Son, Manchester; Haslemere Nursing Home, Superintendent of.

I.—Ilford, Ltd., Ilford, Secretary of.

J.—Junagad State, India, Chief Medical Officer of; J. D. W.; Jessop Hospital for Women, Sheffield, Secretary of; J. M. B.; J. T.; Jeyes Sanitary Compounds Co., Lond.; Dr. G. Jubb, Chester.

K.—Dr. G. Kelman, Peel; Mr. S. Kodachi, Tokyo.

L.—Mr. H. K. Lewis, Lond.; Mr. C. J. Lathbury, Dunstable; Messrs. Lee and Nightingale, Liverpool; Liverpool Stanley Hospital, Secretary of.; Dr. P. P. Laidlaw Lond.; Mr. T. S. Logan, Stone; Dr. J. Lambie, Manafield; Leeds Public Dispensary, Secretary of.

M.—Dr. J. D. McVean, Lees; Dr. A. D. M. Macintyre, Consett; Messrs. H. Miller and Co., Lond.; Messrs. Menzies and Co, Edinburgh; Dr. T. Montuschi, Lond.; Medical Graduates' College and Polyclinic, Lond., Secretary of; Messrs. F. Mundy, Gilbert, and Co., Lond.; Messrs. C. Mitchell and Co., Lond.; Dr. F. K. Mallett, Bolton; Dr. D. T. Macleod, Lond.; Dr. J. Masson, St. Helens; Dr. T. D. Manning, Weymouth; Lieutenant-Colonel Masany, Upper Caterham.

N.—National Dental Hospital, Lond., Dean of; Nottingham General Hospital, Secretary of; Nottingham City Asylum, Clerk to the.

O.—Mr. E. H. B. Oram, Bromley.

P.—Mr. C. Proctor, Nantwich; Parkside Asylum, Macclesfield, Clerk to the; Sir Isaac Pitman and Sons, Lond.; Portsmouth Guardians, Clerk to the.

R.—Mr. L. A. Ravi Varma, Haripad, India; Royal Orthopædic Hospital, Birmingham, Secretary of; Royal Halifax Infirmary, Secretary of; Royal Isle of Wight County Hospital, Ryde, Secretary of; Mr. F. H. Robinson, Clatt; Royal Albert Institute, Lancaster, Secretary of; Registered Nurses' Society, Lond., Secretary of.

S.—Dr. S. A. Salgh, Haifa; Stroud General Hospital, Secretary of; Salford Royal Hospital, Secretary of; St. Marylebone Electric Supply, Lond., Manager of; Stretton House, Church Stretton, Medical Superintendent of; Mr. L. W. Sale, Eastbourne; Smedley's Hydropathic Co., Matlock, Secretary of; St. Mary's Hospitals, Manchester, Secretary of; Sheffield Guardians, Clerk to the; S. G. T.; Messrs. W. H. Smith and Son, Lond.; Mr. A. H. Scampton, Wigan; Dr. Purvis Stewart, Lond.; Sir David Semple, Cairo.

T.—Tynemouth Victoria Jubilee Infirmary Secretary of; T. B.; Three Counties Asylum, Arlesey, Clerk to the.

V.—Messrs. J. W. Vickers and Co., Lond.; Messrs. G. Van Abbott and Sons, Lond.

W.—Waterbury Chemical Co., Des Moines; W. C. H.; Messrs. W. J. Wilcox and Co., Lond.; Messrs. J. Wright and Co., Birmingham; Wolverhampton Education Committee, Clerk to the; Mr. J. F. Windsor, Henley-on-Thames; W. H. K.; Winsley Sanatorium, Bath, Secretary of; West End Hospital for Nervous Diseases, Lond., Secretary of.